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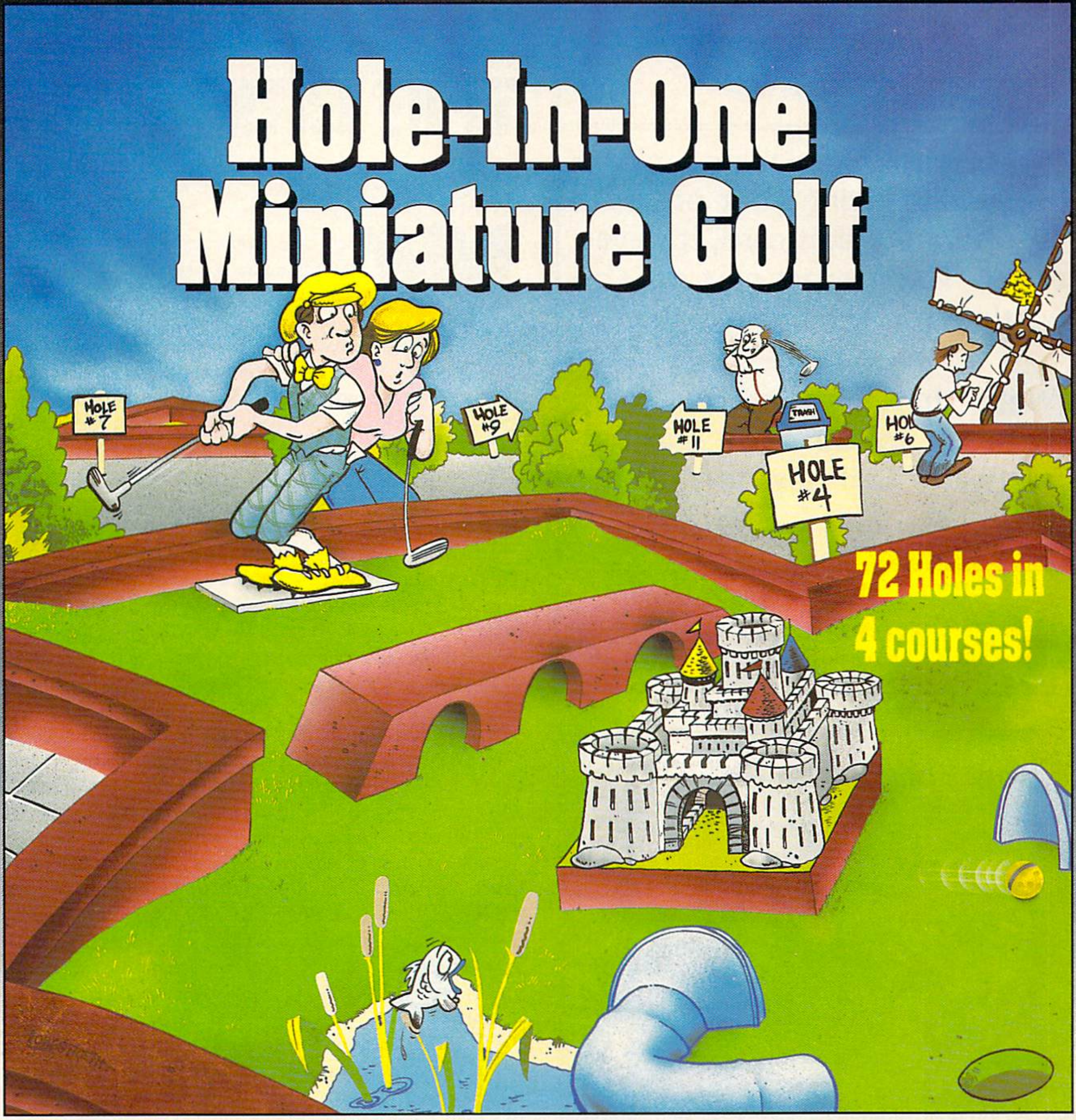
FEATURES

Cover art by Robert Dominiak

ISSUE NO. 4 DECEMBER 1988

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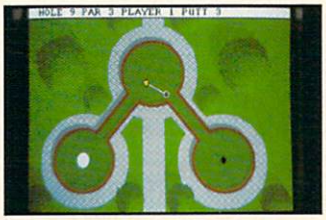


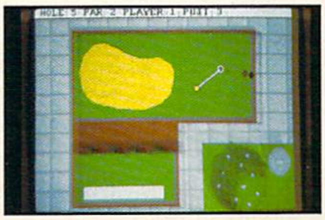
Hole-In-One Miniature Golf combines digitized sound, quality graphics and superior playability with realistic ball play to give you the best miniature golf game made!

Utilizing the mouse (point and click) interface, DigiTek Software has created a game that will challenge adults yet is so simple to play that children can play as easily as adults from the very first game. This game supports up to 4 players making it one of the few games that the entire family really can enjoy together.

Hole-In-One Miniature Golf is 72 Holes of pure fun in 4 separate courses that give you classic miniature golf as well as hilarious fantasy holes. The digitized sounds of the crowds, the ball, and special effects all add to the fun and realism.

Another revolutionary game from the company that brought you Vampire's Empire, Amegas, and Hollywood Poker — DigiTek Software!



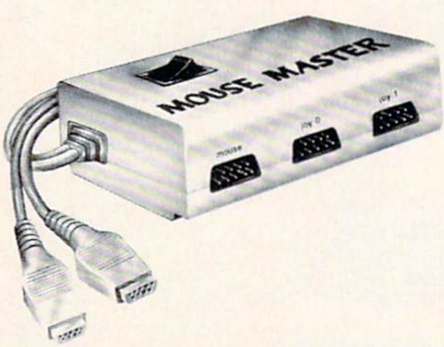




Amiga versions shown here.

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VIEW FROM THE BRIDGE

What's that—you never knew Santa kept his records on an Amiga? He used to own a supercomputer, but it was accidentally shipped to a little girl in Nebraska—seems one of the elves misread her request for "Crayons." Then he tried a laptop, but kept forgetting to move it before kids sat down. As we understand it, though, he's very happy with the Amiga. With nearly a billion children on file, you see, he has to do a *lot* of multitasking.

We've been as busy as Santa's elves putting together this December issue of *Ahoy!'s AmigaUser*. Here are some of the goodies inside:

• Desktop video is perhaps the ideal Amiga application. There, your computer's graphics, sound, and multitasking abilities are all brought into play. In three articles in this issue, Jay Gross and Richard Herring describe the origins, the uses, and the advantages of Amiga desktop video, touching on everything from societal considerations to price tag. (Turn to page 23.)

• When drum machines became popular, many human percussionists were put out of work. Now the Amiga is going to do the same to drum machines. Steve King will tell you why your Amiga and any of three commercial packages beat the dedicated units. (Turn to page 66.)

• The authors of *AmigaUserTerm* (May '88) further enhance your Amiga's ability to talk to the outside world via the RS-232C port. In *Amiga RS-232C Standard Communication,* Paul Maioriello and George Sokolowsky tell you how to build the cable you'll need to connect a modem and link up with other data communications equipment. (Turn to page 61.)

• You may be one of those Amiga owners who turns up his or her nose at the mention of MS-DOS. But to do so is to deprive yourself of access to thousands of programs that may never be available on the Amiga. If you've invested in a Bridgeboard or even a software-based IBM emulator, it makes sense to learn to utilize MS-DOS to the fullest. In his miniseries titled *MS-DOS Meets AmigaDOS*, Ted Salamone will step you through the world of Big Blue. (Turn to page 71.)

• Members of the *Ahoy!* Access Club have already oohed and ahed over the December *Clipper* bound into the front of their magazines. This month's edition contains discount offers from Discovery, DigiTek, Creative Computers, SunRize, and many other companies—offers not available to the general public. If you're not a member, we direct you to page 60, where you'll find out how to become one free!

We hope this holiday season brings you and your Amiga everything you've hoped for. (It's just a good thing that elves have tiny fingers—otherwise they'd never be able to assemble microchips!)

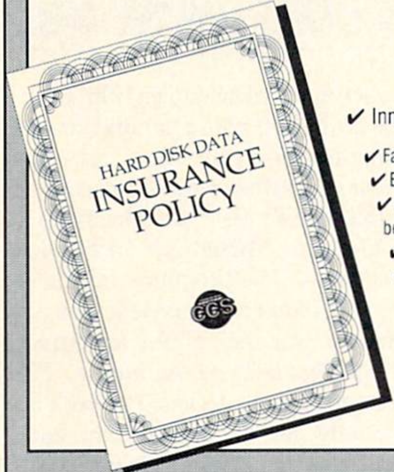
—David Allikas

FOR THE AMIGA

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FLOPPY DRIVES

The Unidrive ($169) and the Twindrive ($299), two 3.5" 880K external floppy units for the Amiga, are one inch and two inches high respectively. Either unit can be powered by the Amiga or from an external power supply. A hinged dust cover protects the heads when the diskette is removed. Both are also covered by a one-year warranty, and a guaranteed factory upgrade allows the Uni owner to move up to a Twin for $130.

Memory and Storage Technology, Inc., 602-483-6359 (see address list, page 22).

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LIGHT PEN

Inkwell's Model 184-A light pen ($129.95) is plug-compatible with Amiga 500, 1000, 2000, and A2000 (German version) computers. Its two touch-actuated switches, used in conjunction with the included Amiga Light Pen Driver, can replace or be alternately used with the two-button mouse for data entry control. It works through the CLI or Workbench in either interlace or non-interlace modes with mouse-driven Amiga programs. Suggested applications include painting, drawing, free-hand sketching, and CAD. A help manual is included on the disk.

Inkwell Systems, 619-268-8792 (see address list, page 22).

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A2000 AMPLIFIER

The Audio 2000 stereo amplifier fits in one of the Amiga 2000's IBM slots, with no soldering required. A panel that mounts where the computer's power and hard drive lights are located contains replacements for both, plus left and right volume controls and headphone jack. The internally powered unit's output is over 4 watts per channel (4 ohm speakers) and can be used with any speakers 4 ohms or larger. Price is $79.95 plus $4.50 shipping; OH residents add 5.5% tax.

Day's, 614-397-5639 (see address list, page 22).

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ONLINE HELP

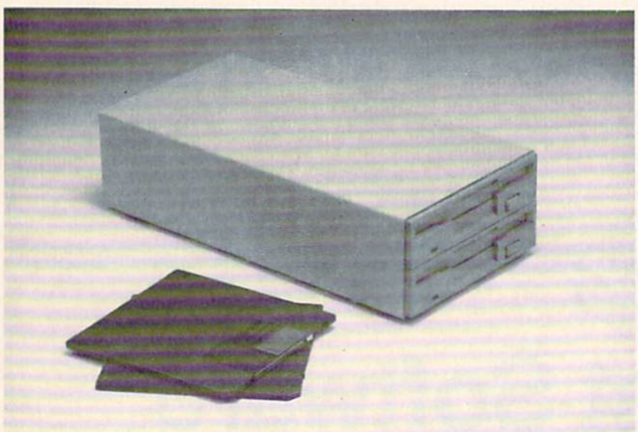
The ToolCaddy Docs are a three-volume series of online Amiga help. Functions covers the entire complement of Amiga function calls; Structures, the Amiga structures contained in each of the INCLUDE files; and Mnemonics, the Motorola MC68XXX Instruction mnemonics. The programs remain in the background until needed, then are called up by a click on the left Amiga key and the right mouse button. The three versions are designed to work individually, or to complement each other by sharing internal resources. Informational files remain on disk until selected, so total RAM requirements never exceed 12K. Price is $39.95 each.

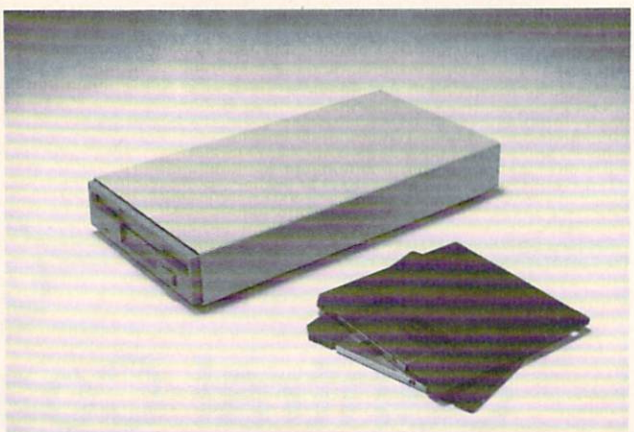
The ToolCaddy Works, 702-298-4252 (see address list, page 22).

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VIRUS RX

Computer Viruses—A High-Tech Disease explains viruses (to which auto-booting computers like the Amiga are particularly susceptible), their history, how they work, and what can be done to protect against them. Several rudimentary programs demonstrate some of the ways viruses can infect your





The Twindrive (left) and Unidrive floppy disk units are 2" and 1" high respectively. Power requirements are 12mA and 6mA respectively, allowing both drives to remain cool. A hinged dust cover protects the heads.

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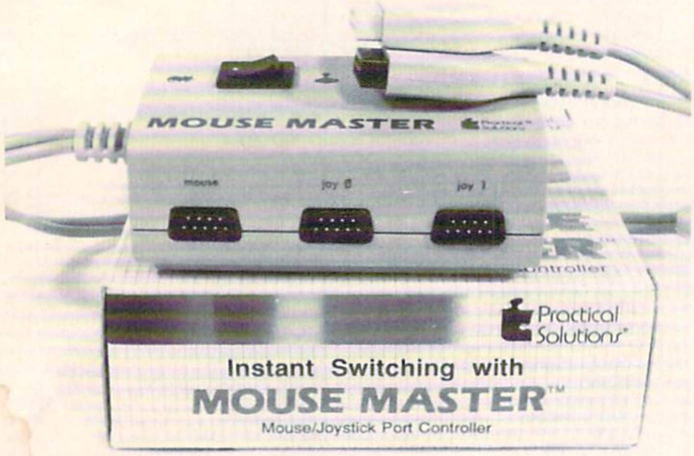
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Requiring no separate power supply, Mouse Master permits instant selection of mouse, joystick, or other controller. A 26" cable allows easy positioning.

computer. 288 pages; $18.95.

Abacus, 616-698-0330 (see address list, page 22).
Circle #161 on Reader Service Card

GRAPHICS SHOW

The 5th Annual Computer Graphics New York Show, to be held January 17-19 in the Jacob K. Javits Convention Center, will showcase graphics hardware, software, and services. Sessions will address desktop publishing, corporate video/animation, business and corporate graphics, and CAD. Admission is free to those who preregister.

Exhibition Marketing & Management Co. Inc., 703-893-4545 (see address list, page 22).
Circle #162 on Reader Service Card

$100 IN FREE TIME

The Online Information Network (formerly the Instant Yellow Page Service) will give our readers $100 in free usage if they mention *Ahoy!'s AmigaUser.* The network makes it possible to compile custom mailing lists via dial-up access to three major databases consisting of 13 million business listings, 462,000 US manufacturers, and 3.9 million high-income customers. Charges are $1.00 per minute connect time plus 12¢ per record printed or displayed, as well as a $95 subscription fee for the first year (second year, $60).

Online Information Network, 402-593-4593 (see address list, page 22).
Circle #164 on Reader Service Card

TRADE-IN EXTENSION

Commodore has extended until December 31 the trade-in program that allows owners of any Commodore computer to receive a $100 credit toward the purchase of an Amiga 500 or 2000.

Further information can be obtained at any Commodore dealer, or direct from Commodore.

Commodore Business Machines, 800-343-3000 or 215-431-9100 (see address list, page 22).
Circle #165 on Reader Service Card

BBS LAW

SYSLAW: A Legal Guide for Sysops explains the legal rights and risks of bulletin board operators. The 100-page volume discusses the consequences of someone's posting copyrighted material on your board, your barring someone from using your BBS, the ramifications of charging users or accepting ads, and more. The book's authors are two attorneys with a knowledge of the subject: Jonathan Wallace is Assistant Sysop of CompuServe's Law Forum, Rees Morrison is a sysop on the American Bar Association's BBS, and together they run Lawyers Linked by Modem, a BBS for law-related material (212-766-3788). Price of the book is $19.00 plus $2.00 postage.

LLM Press, 212-766-3785 (see address list, page 22).
Circle #163 on Reader Service Card

PHOTON PAINT NEWS

Photon Paint 2.0, still under development at press time, will offer such enhancements as multiple swap pages, alternative drawing sources such as rub-through, pantograph, and brush-patterns, new drawing modes including And, Or, Xor, Add, and Use H, ColorFont support, and Cycle Draw. Also included are several new tools: air brush with definable spray area, fill-polygon tool, and polygonal brush cutter.

Two *Photon Paint Expansion Disks* provide a variety of surfaces for the *PP* artist who prefers not to start from scratch. Disk I–Wood Surfaces includes woven reed, cedar, mahogany, Spanish oak, and more. Disk II–Marble Surfaces contains Green Onyx, Stone, and others. The price of the pair is $29.95.

MicroIllusions, 818-360-3715 (see address list, page 22).
Circle #152 on Reader Service Card

CLASSIC ILLUSTRATED

Jumpdisk's illustrated Amiga version of "The Legend of Sleepy Hollow" includes the full text of the story, an interface for screen display, printing, and speech, and 10 original illustrations, plus a talking slide show program and a tutorial on using it in other applications. A version of "A Christmas Carol" is planned for December release. Price is $4.00, or $525 Canadian, or US $5.75 to be airmailed elsewhere.

Jumpdisk, 916-343-7658 (see address list, page 22).
Circle #153 on Reader Service Card

2ND SPOC DISK

Along with their disk of over 30 games, puzzles, educational programs, and more, S.P.O.C. now includes SPOCPD, a collection of Amiga public domain programs, all of them reworked to insure that they run properly. The price remains $25.00.

S.P.O.C., 918-432-5774 (see address list, page 22).
Circle #154 on Reader Service Card

DON'T LOOK BACK

Micron Technology has stopped accepting orders for Amiga 500 and 1000 memory expansion chassis. From here on, they will produce memory expansion products for the Amiga 2000 only.

Micron Technology Inc., 208-383-4000 (see address list, page 22).
Circle #155 on Reader Service Card

MOUSE MASTERY

The Mouse Master switchbox ($39.95) eliminates the need to swap mouse and joystick cables. The unit, which plugs into both of the Amiga's mouse/joystick ports, provides three separate switch-selectable ports for the mouse and joysticks. A 26" cable enables users to position the controller in a comfortable location.

Practical Solutions, 602-884-9612 (see address list, page 22).
Circle #181 on Reader Service Card

DR. OXIDE SLICES PRICES!

Comp-U-Save's cost-cutting clinician is at it again! This month Dr. Oxide, a bargain-basement surgeon if ever there was one, offers the industry's lowest prices on hardware and software, plus special deals on products available only through Comp-U-Save!

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AMIGA DEVELOPER'S KIT

We bought Commodore's entire inventory—only 100 left! Documentation for the entire Amiga system—hardware, software, and all programming tools for C or assembler. Includes Lattice C, Assembler by Metacomco, 2 volume ROM Kernal manual (totaling 1200 pages), AmigaDOS technical reference manual, AmigaDOS developer's manual, AmigaDOS user's manual, hardware manual, Intuition manual, Updates and Errata package containing symbolic debugger and WACK, cross compiler for C, assembler for IBM or Sun Microsystems. Version 1.1, not 1.2, but it all runs under the 1.2 operating system.

Total value close to $500!
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BUSEXPANDER FROM BILL'S BOARDS

The only board for the Amiga 500 or 1000 that expands either machine to 12 slots! Fits in any baby AT case and provides 6 slots for the 2000, 6 for the PC (4 of those for the AT). Now you can use most of the expansion cards designed for the 2000—hard disk controllers, 2/4/8 meg RAM cards, A2088 Bridgeboard, etc. Use low cost IBM-compatible expansion cards already supporting a wide range of business and scientific applications. Designed to work with auto configurable cards. Meets ZorroBus and Amiga 2000 Bus electrical specifications. Available exclusively through Comp-U-Save!

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★ Mouse Mat (Fabric)	$ 5.00
★ Mouse Mat (Teflon)	$11.00
★ Gender Changers—All Types	Call
★ Static Mat (23.5 x 25.5 in.)	$24.00
★ Rapid Fire Joysticks	$12.00
★ Printer Buffer (32K—512K)	Call
★ RF Modulator	$14.99
★ A/B Switch (Ser.)	$13.99
★ A/B Switch (Par.)	$14.99
★ A/B/D/E Swtich	$29.99
★ Crossover Box	$39.99
★ Cables 500—1000—2000	Call
★ Teak Diskbank (holds 150 3.5 in. disks)	$39.99
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★ The Library (holds 80 3.5 in. disks)	$19.99
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★ 3.5 in. DS/DD Disks (Bulk)	$1.10 ea.
★ 5.25 in. DS/DD Disks (Bulk)	$.39 ea.
★ Books—All Titles 20% Off	Call
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NEW VIZAWRITE

Progressive is offering the new Version 1.09 of *Vizawrite Desktop* at a 47% price reduction: $79.95, compared to $149.95 for the previous version. Additionally, the upgrade features faster text/screen handling, final adjustments to some bug problems, and better printer support, including a user profile for customized printers and allowance for printer selection through Preferences.

Progressive Peripherals & Software, 303-825-4144 (see address list, page 22).

Circle #176 on Reader Service Card

3-D MODELING

Aegis' *Modeler 3D* ($99.95) lets the user generate anything from simple 3-D geometric shapes to complex, mathematically accurate objects in a CADlike environment. Objects created can be loaded into the *Aegis VideoScape 3D* animation system and manipulated as part of an animation sequence. Simple shapes like spheres and boxes are available from pulldown menus. Additionally, drawings created with *Aegis Draw, Aegis Draw Plus,* or *Aegis Draw 2000* can be loaded into *Modeler 3D* and turned three-dimensional with a single command. It can then be treated as any other object, adding points, polygons, and different types of colors and shading, loaded into *Aegis VideoScape 3D,* and animated. 1 meg of RAM and at least one disk drive are required.

Aegis Development Inc., 213-392-9972 (see address list, page 22).

Circle #177 on Reader Service Card

MUSIC COPYING

Copyist DTP ($399) permits the musician to score-edit and transcribe his compositions with the aid of pulldown menus and windows. A complete range of musical symbols is provided; or, you can create your own. The program transcribes treble, bass, alto, and percussion clefs, and will allow you to convert any of the supported formats to any other. Beams can be slanted or horizontal; smooth slurs, ties, and dynamics are supported, even on dot matrix printers; and there is 4-point adjustment of slur curvature, direction, and height. Cut, Copy, Paste, Move, and Delete functions are available; Quantize options include timing and duration independently, each track separately, and four sections of individual tracks. You can also map any sequencer track to any stave and print individual parts, transposed for each player.

Copyist DTP transcribes the popular music sequencers, and supports all Postscript printers, HP Laserjet Plus, HP plotters, and Epson FX and HP Inkjet compatible dot matrix printers. Score length is 100 pages.

Two other versions, *Copyist Apprentice* and *Copyist,* are available for $99 and $249 respectively.

Dr. T's Music Software, 617-244-6954 (see address list, page 22).

Circle #178 on Reader Service Card

ACCOUNTS UPGRADABLE

KFS's 1.2 Version of *The Accountant* ($299.50) adds Inventory and an integrated retail Cash Register to the package released this past spring (see review in the May *Ahoy!'s AmigaUser).* The 500-item Iventory sorts by vendors or 99 departments with a 10-character, alphanumeric SKU number, and will generate single or automatic purchase orders. The Cash Register program allows store owners to use their Amigas to offer percentage discounts, and manage layaways, coupons, and other functions. With immediate Inventory updating, the Cash Register will also post Account Receivable Sales during regular business hours without exiting the Register.

Other improvements are the ability to print Financial Statements to screen, or to disk for multitasking with other programs like word processors for producing mailing labels; and 400% faster Optimized Sorts and Batch Report Printing. The system also uses 1.3 Preferences and Printer Drivers.

KFS Software, Inc., 813-584-2355 (see address list, page 22).

Circle #179 on Reader Service Card

ART CONTEST

The first annual AmiEXPO Art and Video Contest will be judged during AmiEXPO New York, March 3-5, 1989. Contest categories and grand prizes are as follows:

Two Dimensional Image: *A-Pro Draw* package from R & DL.

Three Dimensional Image: "Piggyback" accelerator from Computer System Associates.

Digitized Image: Perfect Vision digitizer from SunRize Industries.

Animation: 20 meg hard drive from Supra Corporation.

Mixed Media Video: Live from A-Squared and *Invision* from Elan Design.

First, second, and third prize winners will receive commemorative plaques and have their work displayed during AmiEXPO New York. Contact Stephen Jacobs of AmiEXPO for official rules and application forms.

AmiEXPO, 212-867-4663 (see address list, page 22).

Circle #180 on Reader Service Card

GAMES

Tracers ($34.95) requires you to guide a growing "snake" around a grid in a manner that will force your opponents to crash.

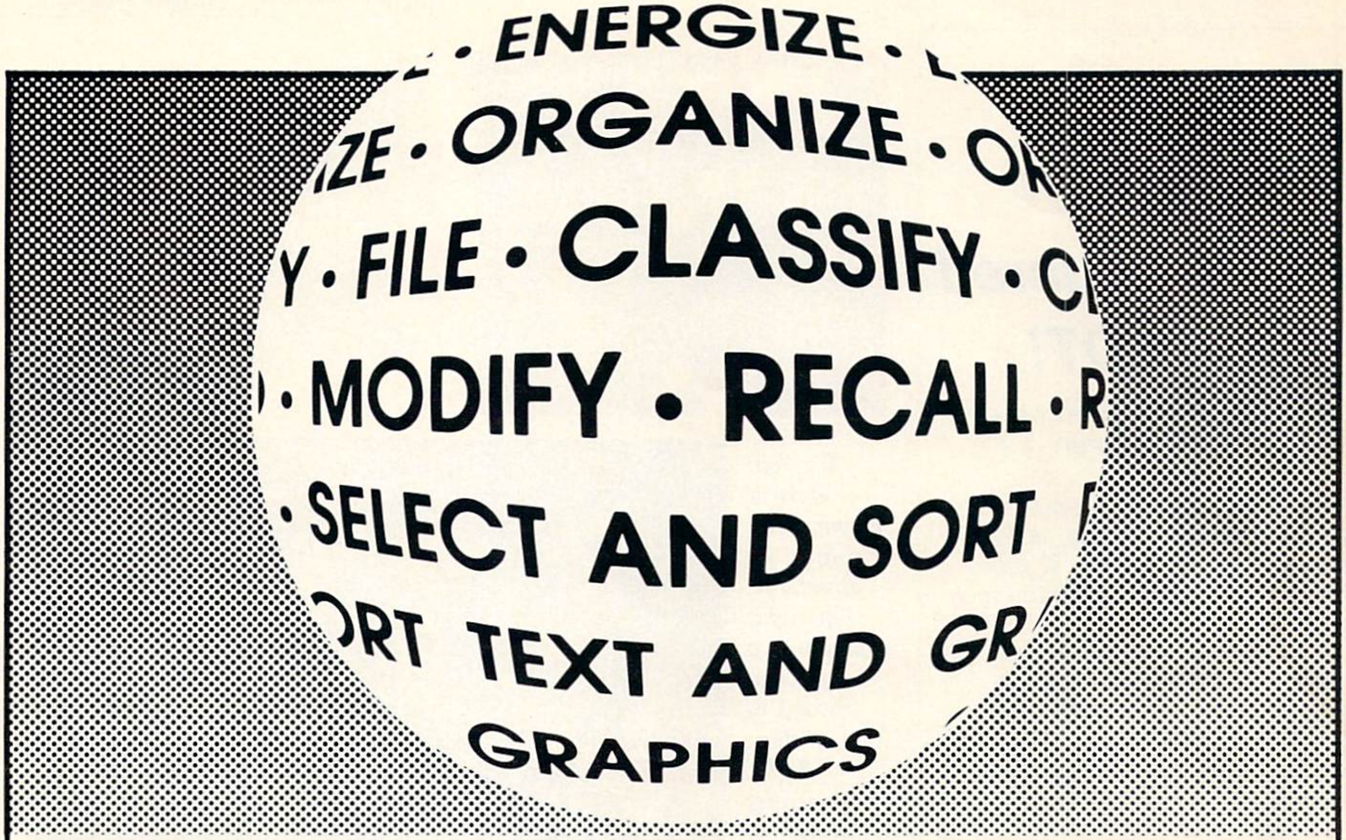
MicroIllusions, 818-360-3715 (see address list, page 22).

Circle #157 on Reader Service Card

Four games coming from Konami during the remainder of 1988 and 1989:

Ajax engages players in aerial combat with jet fighters, tanks, helicopters, ships, and aircraft carriers.

Castlevania pits the player against ghosts, goblins, demons, and the like,



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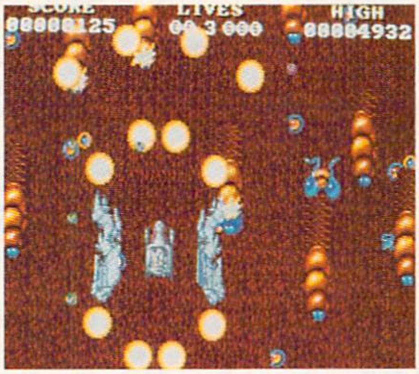
Suggested Retail $179.

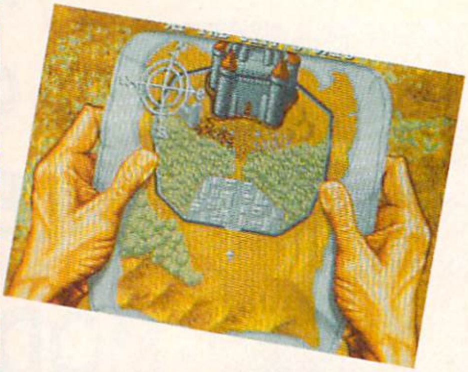
*ARexx sold separately.

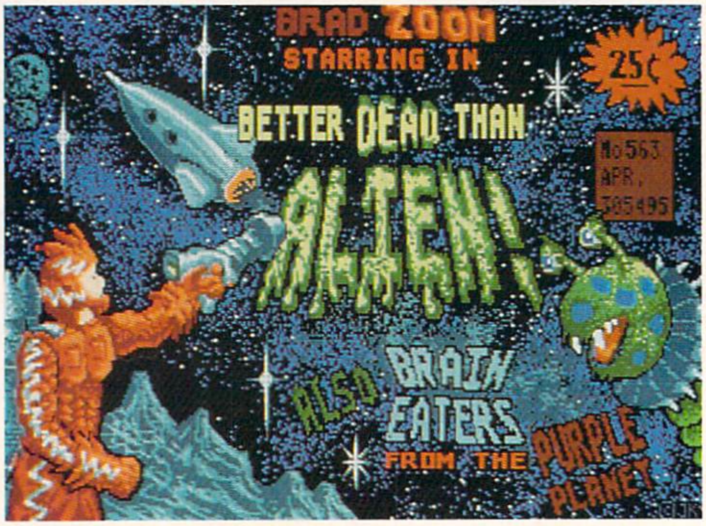
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Circle #137 on Reader Service Card







Top left: Hybris' *megacruiser firing in all directions. Top right: mapping a path in* Sword of Sodan. *Right: opening screen of* Better Dead Than Alien.

culminating in a face to face battle with Count Dracula.

Metal Gear requires players to steel their nerves for a clash with Vermin CaTaffy, whose weapon of destruction endangers the world.

Teenage Mutant Ninja Turtles teams players with the amphibious "heroes in the half shell" of comic book fame to fight off the evil Foot Clan in the sewers of New York.

Konami Inc., 312-595-1443 (see address list, page 22).
Circle #182 on Reader Service Card

Three from Discovery:

Hybris ($39.95) offers a twist in allowing the player to assume the role of either a male or female fighter pilot (though the actual gameplay is no different in either role). In the year 2461 A.D., your mission is to reestablish communications with an earth colony stranded on the faraway planet Jurica. Aboard a scouting ship, you must destroy special targets to attain added dimensions (extra fire power, extra missiles, invincible mode, etc.). The stronger the ship (11 different levels of strength are attainable), the greater your chance to make it to your confrontation with the ultimate alien menace. Each of the game's long-playing levels scroll approximately 8 minutes, for a total of over 25 minutes of play against backgrounds of desert plains, jagged mountains, and seas, with aliens firing from hidden and apparent stations. A Change Options mode lets you control the number of attacking ships, enemy bullet speed, and other factors.

Sword of Sodan ($49.95) also offers a choice of sex. As Sodan or his twin sister Sodanna, you attempt to save your parents, trapped inside the castle Cragganmoor. On your way to the castle walls you must travel through forests, graveyards, and city streets full of wizards, guards, and other villains. The animated characters stand almost ⅔ the height of the screen, making combat easy to follow. But if you miss something, a replay mode will let you study your most recent performance. The game consists of over four megabytes of memory on three disks.

Acquired from British-based Electra Software, *Better Dead Than Alien* ($34.95) is a humorous space shoot-em-up casting the player as galactic hero Brad Zoom. He must battle end-

less waves of slithering and crawling aliens, some easily destroyed, some far more dangerous and deadly. A simultaneous two-player mode is included.

Discovery Software, 301-268-9877 (see address list, page 22).
Circle #183 on Reader Service Card

Who Framed Roger Rabbit attempts to recreate the humor and adventure of the film. While trying to stop Judge Doom from destroying Toontown, players must race Benny the Cab through the streets of Tinseltown, retrieve the missing will at the Ink and Paint Club, and use gags to get past the evil weasels at the Gag Factory. Players keep track of their progress with an onscreen map, and receive animated prizes from characters like Jessica Rabbit via a series of reward screens. A Quick Start Card for easy beginning play and a full-color poster are included.

Buena Vista Software, 818-569-7397 (see address list, page 22).
Circle #196 on Reader Service Card

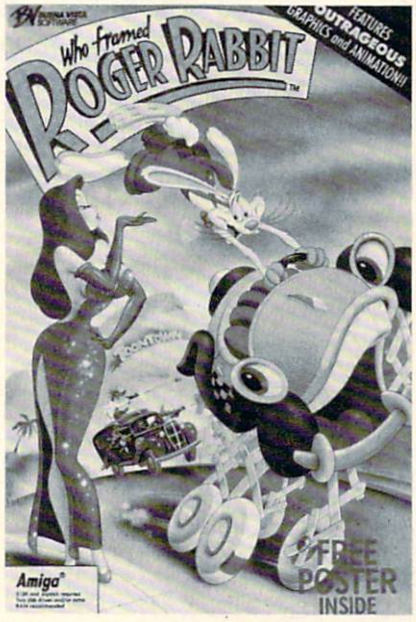
Scheduled for January release, *Heavy Metal*—Modern Land Combat Volume I ($39.95) combines elements of simulation, arcade action, and strategy as you advance through the ranks of today's army. You start in the war as a Second Lieutenant, devising strategies to overrun enemy positions. Once the strategy is set you move to the front line, commanding one of three modern weapons systems: the M1A1 Abrams (the US Army's newest, most sophisticated battle tank), the Martin Marietta Air Defense Anti Tank System, aka ADATS (located at your forward supply station to defend against air and ground attack), and the XR311 Fast Attack Vehicle, or FAV (based on the actual US Army vehicle used to attack outlying enemy stations).

Access Software, 801-298-9077 (see address list, page 22).
Circle #184 on Reader Service Card

The Awesome Arcade Action Pack ($49.99) combines Amiga adaptations of three coin-op hits:

Sidewinder takes place on five levels inside the Star Killer, an alien spacecraft on a mission to obliterate the sun. You pilot your craft through the top-down scrolling interior of the cruiser in an attempt to thwart the aliens' plans.

Xenon requires you to shuttle between a ground-based hovercraft and a jet fighter as you burst through 16 levels of enemy defenses, dodging a constant barrage of alien attacks.



Who Framed Roger Rabbit ***offers humor in the same vein as the hit movie.***

Blastball is hockey, 3613 A.D. style, as space ships on a metal playing field use homing missiles to move the puck. You can pilot one of 10 different ships against a computer-controlled or a real opponent.

Electronic Arts, 415-571-7171 (see address list, page 22).
Circle #197 on Reader Service Card

As the *Global Commander* ($39.95) of the United Nuclear Nation in the year 2032, you are responsible for the welfare of the 16 aggressive, untrustworthy member nations. This involves managing the earth's economies, detente, resources, food supply, communications—and nuclear missiles. To head off the threat of world destruction you must fulfill all needs, cool hot tempers, mend stressed relations, and maintain military security. Your executive privileges include eavesdropping on radio transmissions, spying on illicit activities via satellite, and intercepting missiles with SDI systems. Weekly status reports rate your performance.

Datasoft, c/o Electronic Arts, 415-571-7171 (see address list, page 22).
Circle #198 on Reader Service Card

Mindscape has adapted three Sega coin-op titles to the Amiga, at $49.95 each:

Out Run lets you race a high performance auto through European cities, woods, beaches, and the Swiss Alps at speeds of up to 200 miles per hour.

Space Harrier charges you, an astral exterminator, with the task of ridding the polluted galaxy of some of the most ghastly creatures imaginable.

In *Alien Syndrome* you must rescue people trapped inside an alien-infested genetic laboratory before the lab's self-destructing mechanism makes the job unnecessary.

Mindscape, 312-480-7667 (see address list, page 22).
Circle #199 on Reader Service Card

Two new arcade games from Rainbird, each $29.95:

A creeping menace is polluting the earth, spreading spores of of a poisonous *Virus*. You pilot a hoverplane in pursuit of the Seeder, armed with scanners, laser cannons, and homing missiles. Programmed by David Braben, co-author of *Elite*, the game features such graphics effects as fast scrolling with multidirectional movement, realistic contoured landscape, and light-source projected shadow effects. The control system is designed to facilitate the twisting, curving flight that's necessary during high speed attacks.

You've kidnapped the *SpaceCutter*, a ship so powerful no man has been allowed to pilot it. Seeking freedom, you brave lethal spacecraft, flaming asteroid belts, and enemy missiles as you search through space for stargates, the passages that lead to free ancient worlds. Though the game's appeal lies mainly in its action elements, problem-solving skills will be needed as well. (In Europe, the game will be released under the name *Whirligig.)*

Rainbird Software, 415-322-0412 (see address list, page 22).
Circle #158 on Reader Service Card

Psygnosis' four-disk adventure, *Chrono-Quest*, begins with your dual discovery of your father's dead body and his latest invention—a time machine. As the prime suspect in his murder, you use the device to escape from the present and follow your father's real killer into the future. Price is £29.95 including VAT.

Psygnosis has established the Psyclapse label in order to differentiate specially commissioned games from

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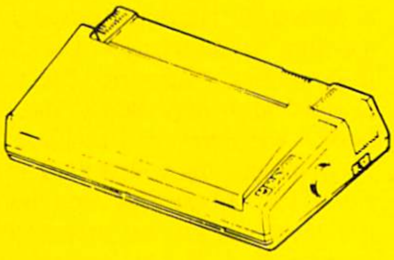
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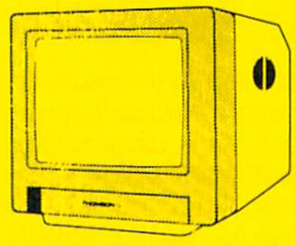
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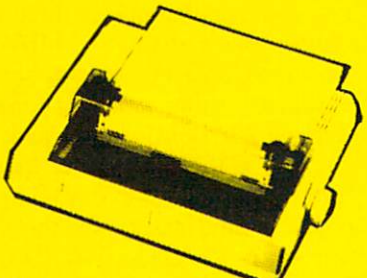
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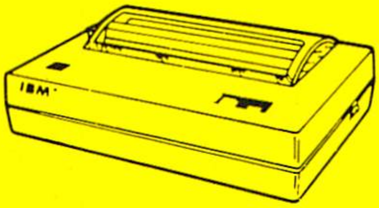
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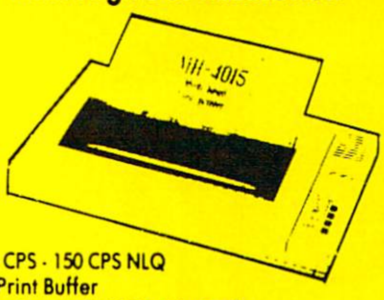
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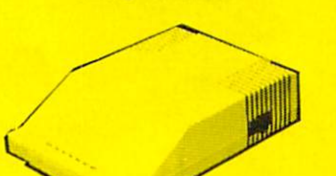
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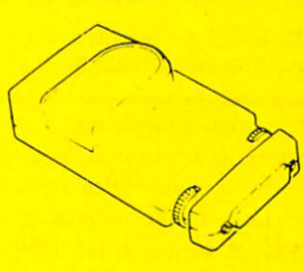
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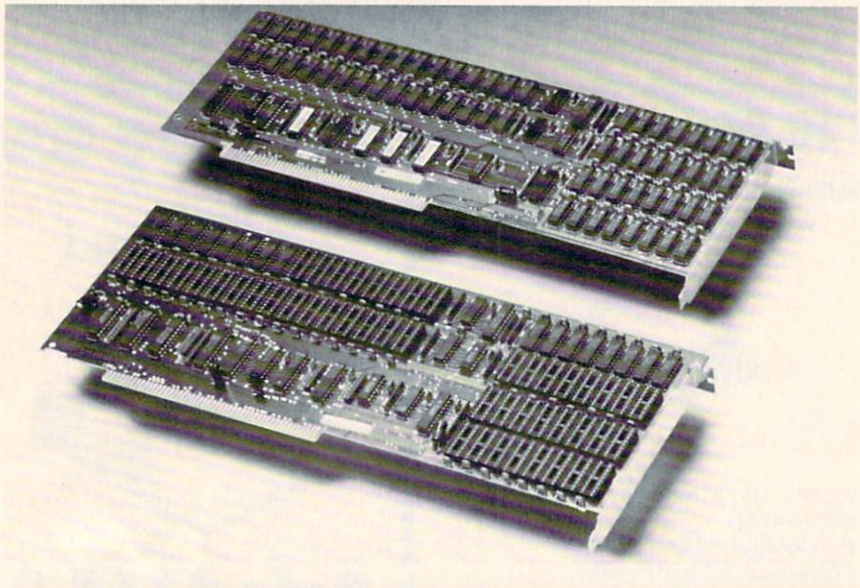
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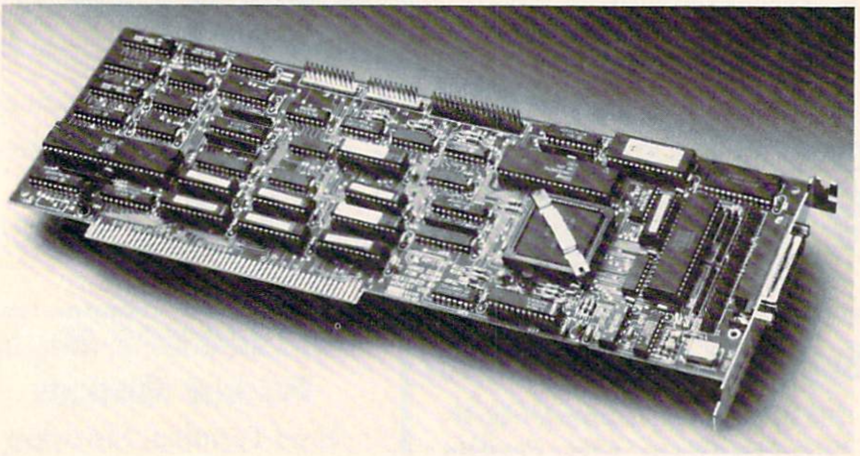
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Top: A2058 RAM expansion card configured with 2 (foreground) and 8 megabytes. Bottom: A2090A hard disk controller contains ST-506 and SCSI interfaces.

their inhouse programming efforts like *Barbarian, Terrorpods,* and *Obliterator.* Six Psyclapse titles are scheduled for release in the months ahead in a variety of 16 and 8 bit formats. The first, *Menace*, should be available for the Amiga by the time you read these words. It is set on the planet Draconia, a world which six intergalactic plunderers have formed from the worlds they've destroyed. At the controls of single fighter craft, you must approach the planet undetected and destroy it. The game features six levels of play, over 60 different aliens, and smooth parallax scrolling. Price is £19.95 including V.A.T.

Psygnosis (see address list, page 22).
Circle #159 on Reader Service Card

Accolade and Jack Nicklaus have signed a three year contract to produce home computer golf simulations. The first, *Jack Nicklaus' Greatest 18 Holes of Major Championship Golf,* is based on the recently released tape from the ABC Sports Video Library. Amiga gamers can play on 18 of Jack's favorite holes, as well as two of his invention. You can compete against Nicklaus, against three human opponents, or against a variety of computer-controlled men and women. Features include skins scoring or stroke play, pro, men's, or ladies' tees, wind intensity and direction, and uphill or downhill lies. The game will be available by Christmas shopping season.

Accolade, 408-985-1700 (see address list, page 22).
Circle #160 on Reader Service Card

2 FOR THE 2000

Two new Amiga 2000 boards from Commodore:

The A2090A hard disk controller ($399) will enable the Amiga 2000 to access a variety of high-speed mass storage devices. The board contains both ST-506 and SCSI interfaces and provides buffered direct memory access with high speed burst data transfer. Up to two ST-506 and up to seven SCSI devices can be connected simultaneously, allowing multiple storage options such as hard disks to be used.

The A2058 memory expansions card ($799) comes standard with 2 megabytes of RAM and room for an additional 6 1-megabit DRAM chips. The fully configured 8 megabyte board provides the maximum possible memory for the Amiga 2000 while using a single expansion slot. The 2000 system auto-configures for the additional memory, which can be accessed and utilized by the CPU.

Commodore, 215-431-9100 (see address list, page 22).
Circle #207 on Reader Service Card

EXPANDERS

Three expansion peripherals from Spirit:

The S 500-2 is expandable to two megabytes of fast memory. The board's 256Kx4 DRAMS require only 4 chips per half meg. The system auto-configs in the standard Amiga expansion range, and has an optional external power configuration. Price of the bare board is $299, with each half megabyte costing $160; so a 2 meg board, for example, would run $939.

The HDA-506 Hard Disk Adaptor ($249) lets 500 and 1000 owners use inexpensive IBM-compatible hard drives with ST-506 controller boards. The adaptor is enclosed in an Amiga-matching metal chassis with passthru, and draws its power from the hard drive power supply.

The MIDI STAR interface features multiple ports, switch control, and LED status indicators. It's available with 1 IN and 4 OUT/THRUs ($169) or 2 IN and 6 OUT/THRUs ($229), and an RS-232 interface, all switch-selectable. The configuration allows distribution control of the MIDI data through the multiple output ports in a "star" pattern direct to the instruments to eliminate daisy chains and signal delay. All ports have two-color LED status confirmation indicators to show when

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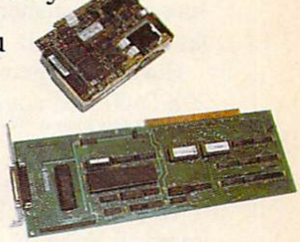


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the port is an OUT, THRU, or OFF, and to indicate which input is in use.

Spirit Technology Corporation, 801-485-4233 (see address list, page 22).
Circle #156 on Reader Service Card

DP II TUTOR

Video Guide to DeluxePaint II offers 30 minutes of tips and techniques for users of the program. In the tape, a professional artist demonstrates enhanced text effects like drop shadows and embossed text, the creation of a 256 color palette using only 16 basic colors, the use of gradient fills for realistic landscapes, adding realistic depth to images via the automatic Perspective, and more. The VHS-format cassette is available only through Electronic Arts' Direct Sales department (800-245-4525) for $19.95 plus $3.00 shipping and handling; or for free when you purchase *DP II* from that department at its retail price.

Electronic Arts, 415-571-7171 (see address list, page 22).
Circle #200 on Reader Service Card

680X0 PROGRAMMING

680X0 Programming by Example ($17.95), a sequel to the *68000, 68010, 68020 Primer*, teaches the finer points of M68000 assembly language with hundreds of practical examples. For the novice, there is a detailed guide to the M68000 instruction set and addressing modes, plus an introduction to assemblers, linkers, and loaders. For the advanced programmer, tips for producing fast bugfree code are given.

Howard W. Sams & Company, 317-298-5400 (see address list, page 22).
Circle #201 on Reader Service Card

KINDWORDS 2.0

The *KindWords 2.0* word processor improves upon the original with new font styles, auto and manual hyphenation, and new menu commands (including Select All and improved Open and Save requesters). Support for Workbench 1.3, including the new enhanced printer drivers, has also been added. Price is $99.95; users who purchased *KindWords* after July 31 can upgrade for $10.

Additionally, *KindWords 2.0* is anchoring *The Publishers' Choice Desktop Publishing and Presentation System* ($299.95). Bundled with it are the *Pagesetter 1.2* desktop layout program, *CaleFonts* (with over 35 different headline fonts), and the *Artists' Choice Artpack* (featuring more than 200 IFF clip art graphics). An introductory tutorial describes the kinds of documents that can be created with the program, and provides step by step instructions for their creation.

The Disc Company, 313-665-5540 (see address list, page 22).
Circle #208 on Reader Service Card

GET YOUR BACKUP

SuperBack ($79.95), formerly known as *V Backup*, has been revamped and is now being distributed by The Disc Company. The utility copies any or all of the files on a hard disk, RAM disk, or network device in minutes. Data can be restored selectively by file, directory, or device. All features are accessible via keyboard shortcuts or the mouse. The manual includes information on formatting various hard disks, plus step-by-step instructions for creating a backup.

The Disc Company, 313-665-5540 (see address list, page 22).
Circle #209 on Reader Service Card

For more information, contact companies directly or use the Reader Service Card between pages 50 and 51.

Companies Mentioned in Scuttlebutt

Abacus
5370 52nd Street SE
Grand Rapids, MI 49508
Phone: 616-698-0330

Access
545 W. 550 So., Ste. 130
Bountiful, UT 84010
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Buena Vista Software
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Commodore
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Phone: 614-397-5639

Discovery Software
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Phone: 301-268-9877

Dr. T's
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Chestnut Hill, MA 02167
Phone: 617-244-6954

Electronic Arts
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San Mateo, CA 94404
Phone: 415-571-7171

Exhibition Marketing
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McLean, VA 22102
Phone: 703-893-4545

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KFS Software, Inc.
1301 Seminole Blvd.
Largo, FL 34640
Phone: 813-584-2355

Konami
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Wood Dale, IL 60191
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Phone: 212-766-3785

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Micron Technology, Inc.
2805 East Columbia Road
Boise, ID 83706
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MicroIllusions
17408 Chatsworth Street
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Phone: 800-522-2041

Mindscape Inc.
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WHITHER AMIGA VIDEO

By Richard Herring

Most of us grew up watching television. Whether it was a gentle teacher that took us to faraway places or an escape that allowed us to avoid the real world, television influenced our lives and became an inextricable part of them. We *are* the TV generation.

TV has shaped not only our values, but even our habits, our likes and dislikes. Is it just my imagination, or has our society demanded more color (in clothing, furniture, automobiles) since the introduction of color TV?

And what effects have our viewing habits had on our daily lives, on our collective attention span? Look at *USA Today.* Phenomenally successful, this national newspaper is targeted at our TV-dependent attention span. Its 600-word articles tell you just enough for you to know that news is actually happening. Then you "switch channels" to the next news blurb. We grew up with TV, and it defined other parts of our culture.

Not today, though. The TV generation is a dying breed—doomed to sit idly by, the passive receptors of information. Whether it's Jacques Cousteau or Vanna White (if you can call what she purveys "information"), TV is a one-way street.

Today's young people, and many of us middle-aged technophiles, want to be more than eyes to see with and ears to hear with. We want change, choice, interactivity. What's my evidence? Let's look at a few trends.

• Yuppie timeshifting. Got a date right when *LA Law* is on? No problem; tape the show and watch later when you can zip past commercials. The pause and rewind buttons are a darned sight more useful than any commercial break. We're taking control of *when* we watch.

• Video rentals. Commercial programming got you bored to tears? Just take a quick run to the video store. It's probably as close as the gas station or convenience store. During the recent TV writers' strike, people didn't turn off the TV and hold meaningful discussions. They left the TV on and switched to cable or rented movies. In 1986, when VCRs had invaded nearly half the homes in the nation, VCR movie revenues topped local box office revenues for the first time. We're taking control of *what* we watch.

• Commercial ventures. Want to sell a product? Use that familiar TV screen to sell it, but make your pitch interactive. Visit Disney World and you will find touch screen videos that serve as tour guides. Watch the development of Prodigy, a joint venture in videotex by IBM and Sears, as it spreads from test cities over the next few years offering news, sports, weather, and home shopping. We're demanding that what we watch be *individualized* to our needs.

• Games and education. Want to get involved, to be a character in the story, to visit that distant land? Use TV for the sights and sounds with other technology (from videodiscs to computers to satellite communications) to put you in control. Interactive videodiscs have been around for years. They let you slay a dragon or tour Aspen, Colorado. VCR games are a popular diversion because they let you be a character and control the unwinding plot. Educators are linking their classes to live events thousands of miles away to make students' scientific exploration and discovery a real "hands-on" process. We're demanding that what appears on the screeen actually *interact* with us.

The TV generation will give way to the video generation. We'll leave it to someone else to come up with a better name than "video generation." One that implies not rented movies, but fully interactive and individualized programming with computers at its heart.

And as we all know, the Amiga will find its way to the eye of the video storm. No other consumer computer is as well suited to deal with the demands of an interactive video environment. Don't get me wrong, we are not there yet and won't be for some time. The flood of Amiga video hardware and software portends the Amiga's future.

Business people will tell you that for persuading an audience or explaining a difficult concept, nothing beats good graphics. They use graphics and video to grab our attention in stores, to present business plans, and to train their own employees. Surely Commodore's "I am the Amiga" videotape has drawn a crowd or two.

Social scientists and educators will tell you that we remember as little as one-fifth of what we only hear. But add a visual image and we remember one and a half times as

much. Make the presentation interactive and we are liable to remember three times more than we would have based on a verbal presentation alone.

Musicians will tell you that the future of popular music is interwoven with video. Live shows, by groups like Oingo Boingo, use Amiga-generated graphics as a backdrop. We've all gorged on music videos like they were potato chips. The industry is on the verge of something far better.

CD+Graphics (or CD+G) will marry our compact disc players to our TVs. A CD can hold up to 600 megabytes—far more room than the music itself takes. A CD+Graphics spec has been defined by Philips/Sony. Graphics are stored in low resolution (320 x 200). Each image is limited to 16 colors and will take up to 7 seconds to display. With standards like these, the only problem for Amiga artists will be holding themselves back.

JVC has already shown a $400 decoder at the 1988 Consumer Electronics Show. (CD players with built-in decoders eventually are expected to sell for this price.) Already, the Talking Heads have a CD+G, "Naked," that displays lyrics and music. (We will only mention the more expensive CD-V format that combines 5 minutes of video with 20 minutes of audio on a single CD.)

CD+G relies on the existing CD technology. Much more may be possible. Video Magazine reports that Matsushita has a new laser that can quadruple optical disc storage. And Bell Labs has designed a computer chip that can create a video image using as little as 1/100 the CD data needed today. Changes like these, when coupled with the next generation of Amigas, will overwhelm us with power.

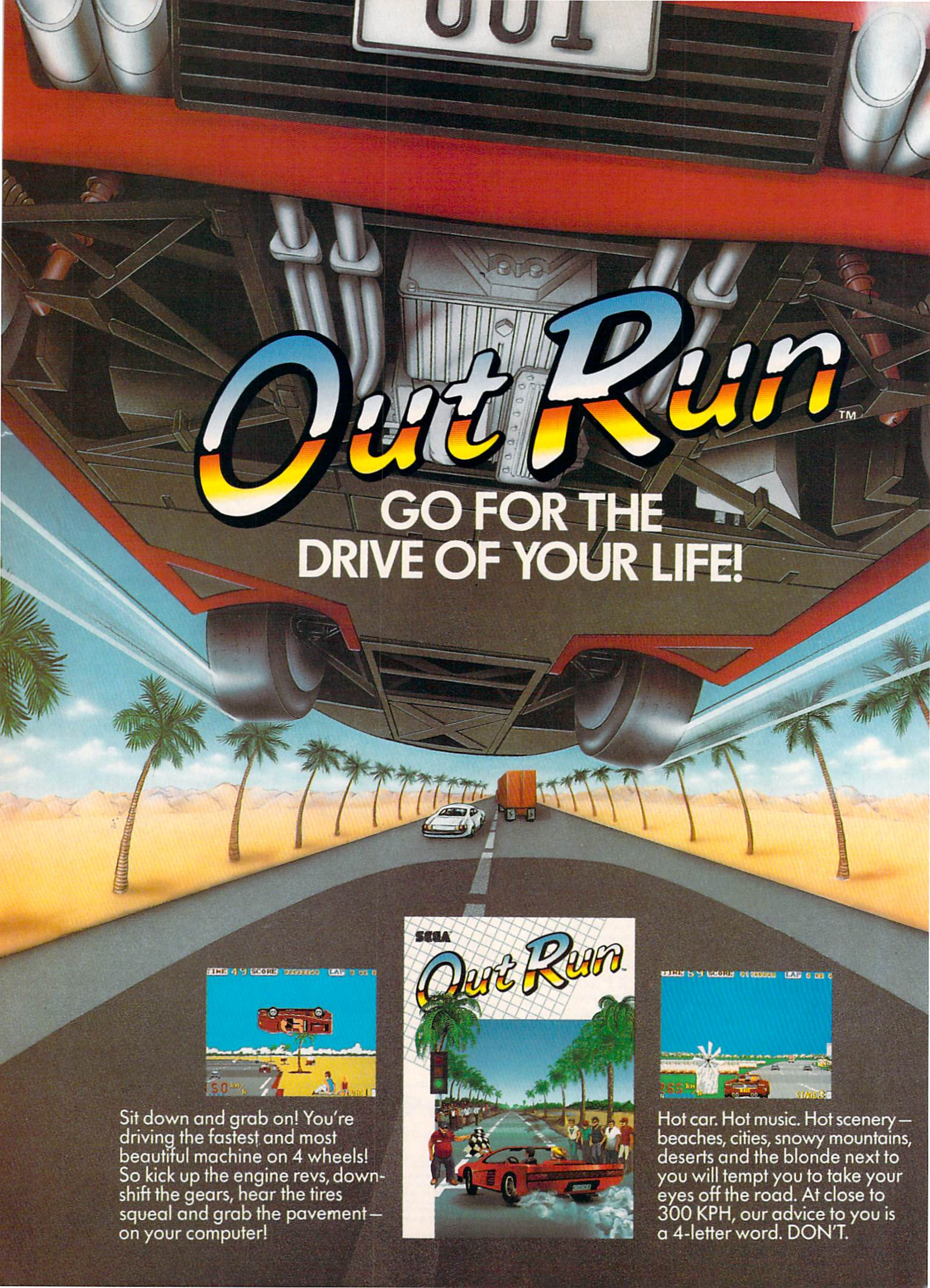
So we have moved quickly through TV and video, entertainment and education, news reporting and marketing. In every area, computers will combine with other technologies to customize our worlds and to allow us to interact with them.

Perhaps nowhere can the possibility of the future be seen as clearly as at MIT's Media Lab. Housed in the Wiesner Building, the Media Lab is a center for research on the convergence of three industries: the broadcast and motion picture industry, the print and publishing industry, and the computer industry.

An enlightening book, appropriately titled *The Media Lab: Inventing the Future at MIT,* by Stewart Brand, describes many of the exciting new uses of computers, video, communications, and art that we all have to look forward to.

One of the most fascinating sections is on animating virtual reality. Scientists and researchers have created everything from real time computer/video environments with sharks swimming around you (using a modified $2.5 million advanced flight simulator) to an instrumented suit that creates animations from your live movements. Through their studies, these researchers push the limits of artificial intelligence, robotics, and animation.

The Amiga is *the* desktop video computer. Desktop video, far from being the "vertical market" that some people limit it to, will prove to have wide appeal in the business and educational commuities. If you're wowed by a killer demo, imagine the effect in the boardroom or classroom when that same technology is used to explain a new concept. □

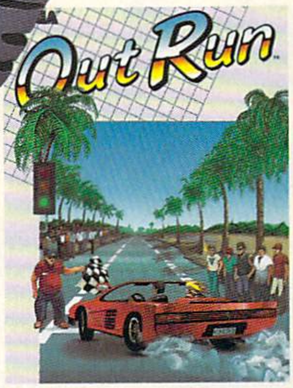

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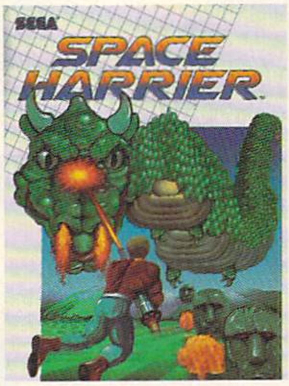


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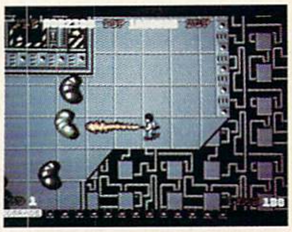












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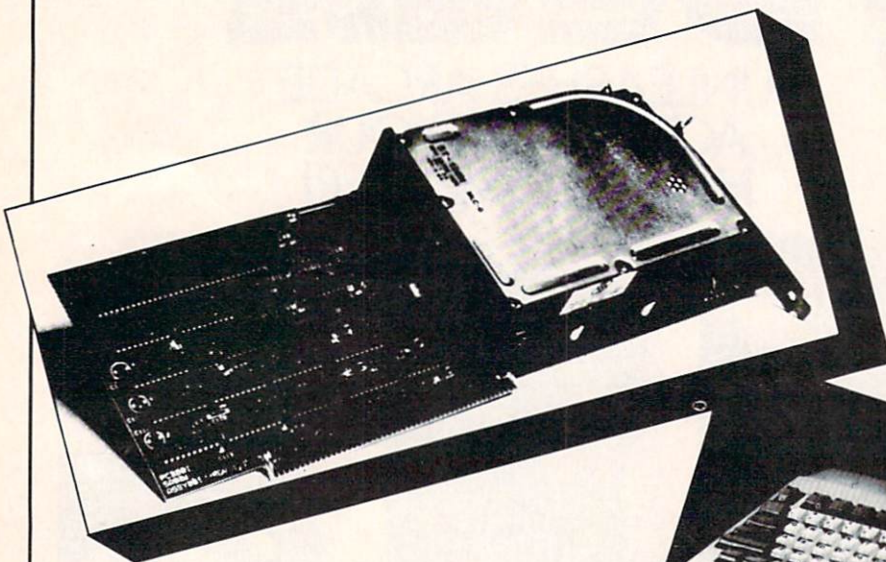
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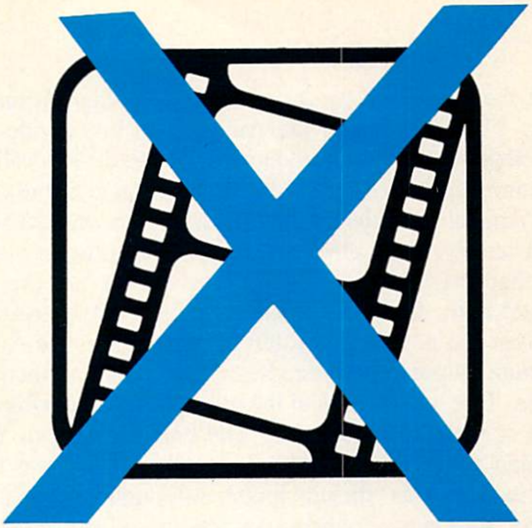
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DESKTOP VIDEO:

First You Have to Know What It Is

By Jay Gross



Quick, now. What's "desktop video"? That's a hard one, isn't it? Video is less difficult to do on a desktop than it is to define. In fact, the concept of desktop video follows along in the rich tradition of desktop publishing. It starts out more expensive than you might have thought. It isn't a new idea, just a new way of describing an old one. And if you get really serious about it, it no longer fits on a desktop.

A desk will as readily hold a million bucks' worth of video stuff as it does a discounter's VCR. Yet, the term "desktop video" conjures up a vision of pure computer-driven magic for nearly no investment. For some of the cold hard realities of this developing end of the video business, and the Amiga business, too, read on. Here are some suggestions on how to get started in it, along with some reasons why you might be interested in getting started in it, and maybe an answer to the question, "What is desktop video"?

SMILE!

Like it or no, home video has taken over where the home movie left off. The whirring of Super 8 movie cameras has been almost completely replaced at family gatherings by the silent blinking of home camcorders. Small wonder. As far as recording life's events for posterity, video has a number of huge advantages over photographic film.

For example, videotape requires no expensive (or time consuming) photographic processing. You don't have to wait a week to get the film back, by which time your enthusiasm has diminished accordingly. You also don't have to entrust your precious pictures to strangers or pay them for doing their thing to them, either. Compare the running time of a Super 8 camera load—about three minutes—to video's (up to) several hours.

Another video advantage is that sound and picture are easily recorded simultaneously and synchronize automatically. Mainly, though, home videotape production is far easier on the budget than home movies when you consider the film processing cost into the bargain, even though entry-level electronic equipment is a bit more expensive than the corresponding film-based gadgetry.

SAY CHEESE!

Compared to consumer camera equipment, today's camcorders can take pictures in less light, adjust for more different lighting situations, focus across a wider range, and carry home the shots in full motion, with sound.

These days, you see videographers everywhere. The video press has accomodatingly coined the term "videots" to describe these peculiarly behaving humanoids.

Peculiar behavior? See what you think. Peering through the camcorder, deftly operating the automatic zoom and focusing, skillfully allowing the camera to adjust electronically for color and light level, the home videographer aims a camcorder at a child's birthday party (for example). Presto! Desktop video?

Not quite—the Amiga is still cold and dark over in the corner on the desk.

Desktop video involves a bit more than just home camcorder shooting. If you just aim and shoot and play the tape in the VCR, you haven't done any of what the industry calls "video post-production," which is the niche where the Amiga fits itself into the video business. Post-production from camera originals isn't the only way to define "desktop video," however. Muddy, isn't it?

MAKE A WISH

After the taping is finished and cake icing is all over the place, the cassette goes into the trusty VCR so everybody can have a good laugh. (No way with photographic film, eh?) Cut to child, puffing at candles. Glitch! Closeup of candles. Glitch! Cut to child opening presents. Glitch!

Those "glitches" (a proper video term, thank you) result from starting and stopping the camera. Some equipment glitches are worse than others. Also, wouldn't it be nice if the picture sort of faded out from one shot and into the next? And how about titles?

Ah, titles! Denise's Third Birthday. Vacation Visit to Epcot Center. Gary's Body Cast. Now we're approaching the realm of desktop video where the trusty Amiga computer can lend a hand. Such things as titles, graphics, and music. Music! Sure, why not? Animations, too. Desktop Video? Close. Have a cigar.

Still, desktop video isn't just one thing—like editing. Add in titling, birthday parties, and animation. Especially animation. Whichever, the Amiga's right at home on a desk devoted to video, so now for a few words about the most basic building block for desktop video, which you probably at least already have one of. The Amiga.

First, clock speed. The Amiga ticks along at an even mul-

tiple of the "speed" of broadcast television. Significantly, to get a TV signal out of the Amiga, you just divide by two. Competing computers require expensive devices called "scan converters" to accomplish the same thing. Score one for the Amiga! With the money you save on a scan converter, you can buy every piece of Amiga video software made —and that's MANY titles!—and have change left over.

Second item, flicker. The same "feature" of the Amiga that drives you nuts in hi-resolution mode makes the Amiga's picture output quite welcome to a video environment—interlace. Take a close look at the titles on the evening news on one of your local channels. The letters dance around something fierce due to the same interlace that gives the Amiga its notorious "flicker" mode. Although it doesn't do much for your eyes, it works wonders in a video setup. If the signal already has interlace (flicker), it doesn't have to be added or worked around.

BYE-BYE, BORDERS

Third, overscan. The Amiga has made borders obsolete in home computering by addressing all those extra pixels (768 x 480 in the USA), and even being able to animate out there as well. Video is not bordered—one of the main reasons the Amiga has found such a hearty welcome in video circles.

And fourth, power. The Amiga's great graphics are most welcome in video circles, too, because video consumers are accustomed to plentiful graphics. Check out any network sporting event for examples, especially the Olympic Games (ABC Television used Amigas to do those flashy graphic overlays during the Winter Olympics). Even the intros to the network's main attractions frequently start with incredibly elaborate computer-animated graphics.

Okay, back down to the desktop, Denise's birthday party cries out for titling.

DENISE TURNS THREE!
A C. Amy Production
Art direction by Paula and Agnes

It's easy as pie to get a title onto the Amiga screen. Even without help from titling software, you can use the Amiga's fonts to put together a passable title screen. Shades of green, purple, red, and yellow. Shades of Notepad!

Shades of desktop video, then? You bet! It's the home consumer end of video production, using the vast power of the Amiga to help things out. Finally, the elusive definition develops....

Next part. How do you get the titles onto the tape? If you videotape the screen, you'll get weird lines, maybe even burn up something(!). Also, there'll be those infernal glitches around each title. Not only that, but there's no room for titling at the start of the tape before the party gets going!

Now you know what a video genlock is for. To mix titles over the party images, you need to synchronize the Amiga's screen image with the image from your party tape and record the combined (the video term is "composited") picture onto another VCR. Forget splicing the tape itself. Don't even think about it. It isn't done.

Yes, the combined image will be a "second generation." That generally means that unless you start with a quality original and use a quality video deck to produce the finished product, you'll lose considerable picture definition in the editing process. Nevertheless, that's the way it's done in video. It's just like in computer programming. Garbage in, garbage out.

SYNCHRONIZE YOUR PIXELS

The genlock is an electronic device which does the matching required to perform the magic of blending the Amiga's screen with Denise's birthday pictures. In video, that means "synch." When the screen's topmost pixel is being addressed by any unit, either monitor, VCR, or camera, that exact pixel is also being addressed on all the other pieces of equipment in the puzzle. If the synch is out of whack, you get a big mess where a picture ought to be.

Since the Amiga came onto the video scene, the cost of genlock devices has dropped dramatically. Home user levels of this device now start in the $150 range, and even the more complex, "broadcast quality" Amiga genlocks start at only $700 or so, although some of them will park only in Amiga 2000's. The premium Amiga genlocks (Magni, Neriki) hit $1600. Compare these prices with the $2000 and way-up level B.A. (Before Amiga.)

More and more of the video industry's magic boxes are becoming affordable to normal humans. As the demand for home video, and "serious" video, and "professional" video equipment increases further, there will be more stuff coming down to earth to meet the demand for desktoppable video equipment that's also wallet-compatible.

PLAYING CATCH

At whatever level, it's catching on, this video thing, and especially the desktop end of it. Have you noticed that certain computer companies are now playing run-and-catch-up with the Amiga, trying to patch video capabilities onto their machines?

Like desktop video itself, the definition of desktop video is still developing, but after all this rambling, desktop video seems pretty well defined, if still a bit muddily. Now, the question is: WHY would you be interested in desktop video in the first place?

Some people become interested in desktop video for its animation potential. Animation is far faster to produce with computers than it is with traditional film. Even when doing meticulous "cell" animation on the computer, the software's memory makes errors easily "undone" and repetitive drawing a matter of clicking the mouse buttons.

Others are attracted to video for the money-making potential. The market for video professionals is expanding, with the Amiga leading the way. You no longer even have to have a millionaire in the family to get started in it. Opportunities are endless. Corporations, organizations, legal services agencies, rock bands.

Rock bands? Yes, columnists in music publications have been caught suggesting that up-and-coming music groups produce not just demo music tapes, but a demo video.

So why would you be interested in desktop video? Good question, simple answer. It's artistically rewarding. It's potentially financially rewarding. And oh yes, it's fun! ☐

DESKTOP VIDEO:

What Does It Cost?

By Jay Gross

You can get into computering for the cost of an Amiga, so how much does it cost to move into desktop video? Answering this question is really simpler than defining desktop video in the first place. First, pick your level, from "Just Having Fun" to "Professional Videographer." Then, pick your price. The higher levels will pick your pocket!

Doing desktop video at the entry level sets you back next to nothing. Add up the cost of a good camcorder, a decent VCR, some Amiga software, and maybe a genlock. You may have some of these items in your collection already. If you have an Amiga 1000, you don't even need a genlock to get the Amiga screen onto tape (in color). For A500 and A2000 owners, several companies produce composite video adapters (listing for $50-$100) that will give you a color, videotapeable signal from the Amiga's RGB output.

The quality you get from these devices varies greatly (mainly downward), and isn't at all what you'd want for professional video work, but it'd be okay for many home video purposes. Adding even a low-end genlock device adds a higher quality color signal, as well as the ability to mix video with the Amiga. The home video level of genlock lists for $150-$300.

ADDING MORE VCRS

For this very small investment so far, you can do wonders for recording Denise's birthday parties. To be able to mix videos or superimpose graphics on videos, you need the genlock unit of your choice and at least two VCR's. Three VCR's would be even nicer, but two will do. Quality counts. The better the VCRs you have, the better your videos will look.

You can't record birthday parties without a camcorder, but if you intend to do only animation videos, you don't particularly need a camera of any kind to get into desktop video.

The Amiga is a high-powered animation tool "just for fun" or for serious, take your pick. There are now several professional animation studios which use the Amiga exclusively for their productions. Two of those are Winners Circle Systems, whose work was shown at Siggraph, and Five Rings Company, whose classical cell animations by Heidi Turnipseed have been featured on a recent Computer Chronicles television program.

Siggraph is the trade show of the Association for Computer Manufacturing Special Interest Group on Computer Graphics. Whew! Time magazine has said that getting picked for the Siggraph art and video show is the computer graphics equivalent of getting an Academy Award in motion pictures.

Amiga animators will mainly want a first-class VCR, preferably one of the so-called "editing" units capable of single-frame recording and truly seamless, "glitchless" edits. Such equipment runs in the thousand dollar range currently. Indeed, for less than $1800, an Amiga animator is pretty much in the uptown range of desktop video, with a quality VCR and a quality genlock. Add software, imagination, and patience. Lots of patience.

SERIOUS GENLOCK

Whether you're interested in animation or anything else, if you're going to be really serious about your videos, you'll want to invest the extra bucks in a "broadcast quality" genlock. Broadcast quality means just that. "Broadcast" quality. No fudging. Electronically, the more expensive units pass along exactly what they get without changing or degrading it. To get broadcast quality, you have to pay for it. The going rate is $600-$1600 or so, subject to change (probably downward) anytime.

Most of the higher end ones also perform other useful tricks like dissolves, fades, and wipes. These add motion to your editing, bringing your productions closer to the kind of work you're accustomed to seeing in professional videos. For just home videos, though, Denise's birthday party will do nicely with a "regular" genlock.

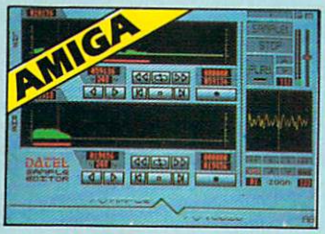
If your interest is really professional use, you'd also want to move up to a more professional video format than consumer-level VHS. Higher (more expensive) levels of videotaping equipment will permit many generations of duplication before picture degradation becomes apparent. For home users—desktop vidiots—the limit with consumer equipment will probably be one or two generations. Some of the more expensive consumer goods will allow several, but two is generally sufficient for home video purposes.

The professional end of video has many, many formats to choose from, but after you leave the VHS/Beta families, you have to multiply the money several times for only a small increase in quality. At some point in that progression, too, the "desktop" part of desktop video no longer applies, though most of the individual items strain the bank account more than the desk.

THE PROFESSIONAL LEVEL

For a look at the more professional end of desktop vid-

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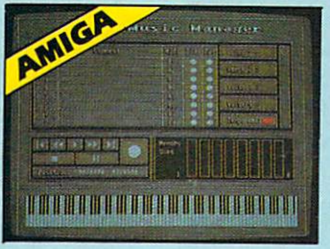
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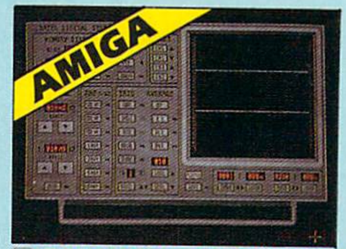
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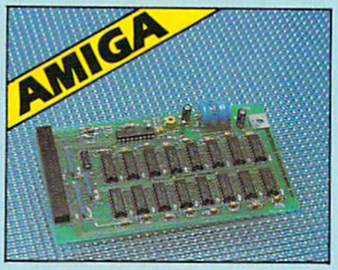
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DATEL COMPUTERS
3430 E. TROPICANA AVENUE,
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eo, all put together in one system, check out RGB Computer and Video Creations (they do the *Deluxe Help* series). The company showed their system of multiple Super-VHS tape decks, audio mixing board, and a flurry of interfacing boxes at both AmiEXPO and Siggraph.

Controlled by a sweetened-up Amiga 2000 (REAL sweet!), the RGB professional Super-VHS editing system tops out at $74,334 at list prices for the whole kaboodle. Don't cringe–that's small change for a major video production facility. To control the system with the Amiga, RGB is producing AmigaLink (tentative title) software, which manages all the video gizmos in the system, as well as providing a base for animation, post-production effects, fancy titling, and editing.

Yes, it even fits on a desktop. Use a sturdy desk.

You don't really need all that stuff to play the serious video game, even as a professional. For one thing, some of the post-production services you'll want are available in most larger cities on a per-hour or per-job basis, so you might not have to own absolutely all the equipment in the pile to get a toehold in the market. A growing number of companies even offer direct support of the Amigas. Examples are Video Technics, of Atlanta, whose Amiga support is extensive, and Gossett Graphics of Mountain View, CA. Both companies were exhibitors at Siggraph.

With all the increasing interest in doing video on the desktop, the willingness of consumers to venture into video has not escaped the attention of electronics manufacturers. Sony, a major producer of video equipment for every level of the market, has even identified and targeted a new level of video marketplace which it calls "Prosumers." That's a consumer level video enthusiast who has the money and taste for "professional" equipment. Of course, Sony can't invent a market. It can only point to one that already exists and provide a convenient name to call it by.

Whether you call it "those crazy people lugging the heavy battery packs everywhere," or "prosumer videography," or "desktop video," the market is there, and the Amiga is a staple in it. It's likely, too, that the Amiga will have–as it has already had–a significant effect on shaping that market's future.

Spurred by the Amiga, the cost of doing video is decreasing. Until the Amiga, for example, a genlock device was hardly something the consumer could afford. It was the Amiga's under-$300, A-1300 Genlock that paved the way for the inexpensive units now on the market.

That wonderful trend continues. Many new video doodads were shown at the Midwest AmiEXPO in Chicago, where it was apparent that many people attended especially for the Amiga video tricks.

OH, YOU WANT MORE!

So how much does it cost to get into desktop video? A few hundred to a few hundred thousand dollars. As much as you want to spend, or as little as zip!

Of course, the Law of Spiraling Expenditures applies, whether your interest is computers, photography, desktop video, or antique yacht collecting. No matter how little you can get started for, once you're hooked, you'll find wonderful opportunities to spend lots more money. ☐

LOVE ON THE AMIGA

By Joyce Worley

BIRDS 'N BEES
(Disk; $14.95)
INTERACTION
(3 disks; $99.95)
THE LOVE QUEST
(disk; $44.95)
All distributed by IntraCorp

When it comes to love, education is always fun. Few subjects grab the attention so quickly, or engage interest as predictably, as the search for sexual knowledge and romantic love. This trio of software programs is aimed at the libido, but like a wistful maiden who enters her man's heart through his stomach, these titillate the heart by first tantalizing the mind.

The three programs couldn't be more different. One is a tutor for youngsters who need to know the facts of life; the second is an exploration of your own sexuality; and the third actually puts romantic hopefuls in touch with other people searching for happiness.

Birds 'N Bees is a straightforward educational program that lets parents control the child's access to sensitive parts of the subject matter. Parents input the age and gender of each child. From that point, the information presented is limited according to the parameters established.

The main menu offers six options: Instructions, Lessons, Questions & Answers, Dictionary, Parental Options, and Exit Program.

Questions & Answers presents a question, then displays its correct answer. This is a good study tool for general facts-of-life information.

The Dictionary section contains sexual and medical terms appropriate for the indicated age level, along with pronunciation guides and definitions of each entry.

The lessons are the backbone of the program. Subjects available for study are Development (the sexual development of the body); Personal Safety (warnings about improper advances, and safety tips for avoiding molestation or rape), Reproduction, Abortion, Birth Control, and Sexually Transmitted Diseases.

The presentation is not elaborate. The child reads several screens of text on the lesson topic, then completes a short quiz. Incorrect answers prompt a text redisplay, with pertinent data highlighted for review. Then the test is given again. This continues until every question is answered correctly. A congratulatory message flashes onscreen, and the next lesson begins.

The Parental Options portion establishes controls for each child, and requires use of a password. The program comes set to respond to "Intracorp," but urges parents to establish their own secret code. There are three levels of study. The first contains very basic information. Level two should be used only after the child has completed the first lessons. Level three is for children who've completed the first two sections. After instituting these guidelines, the parent decides if the child is ready to study the abortion, birth control, or sexually transmitted diseases sections.

This is not a fancy program. Text is presented with no embellishments or illustration. But, information is presented in a sensitive, open-minded way. Treatment of controversial subjects like birth control and abortion very carefully includes the pros and cons, without making any moral decisions. It's a nice way for a computer-using child to learn some basic facts in a private dignified manner.

Interaction is an adults-only program that allows you to "explore your love and relationships." An exhaustive list of over 100 very adult sexually oriented questions explore the individual's experience and preferences. This is definitely not a party piece; the information generated is quite personal, so every survey is protected by its own password.

There are two ways to use the information gathered this way. The program delivers a complete analysis of the user's sexual style, sexual personality, sexual behavior, special sexual behavior, and sexual dysfunctions. The user may also choose to see only a partial analysis on any one of these subjects.

The analysis spews back the responses along with commentary drawn from an impressive list of reference works. In fact, statements are referenced with numbers that coincide with the bibliography contained in the manual, so the user can do extra reading if desired.

The questioning procedure is actually an interactive/branching program. That is, answers given to some questions cause the program to produce additional queries. This customizes the test for each person. The analyses are similarly individualized. A large database of psychological information contains text blocks which combine differently for each analysis, and information from the survey inserted into the text further personalizes the reports.

Users can also see this personal data compared with some sexual statistics, to learn how their own personal tastes rank with others. A third option measures the responses of two users in a sexual compatibility report.

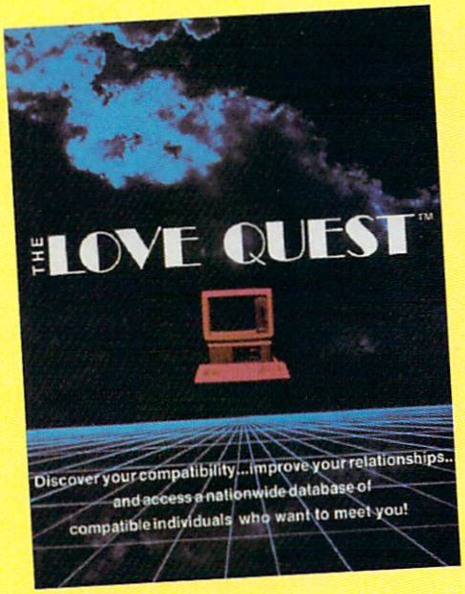
The analyses provided are meant to be taken seriously, and they are rooted in some fine psychological research. But the folks at IntraCorp urge users to consult professional advisors for additional information; this program cannot take the place of a trained counselor, though it may provide some valuable self-awareness.

The Love Quest uses a similar format to explore personalities, then goes one step further by actually attempting to pair compatible individuals, as a sort of high-tech matchmaker.

The main menu accesses onscreen instructions, the Love Quest profile, an analysis of the completed profile, a compatibility study between users, and the love quest code.

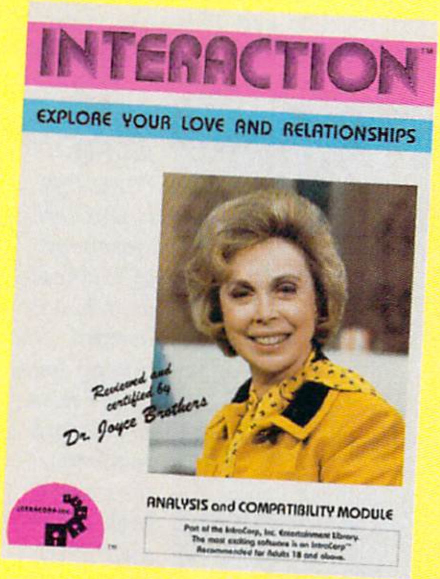
Each user enters a name and (if desired) a password to keep the profile private. Questions start with gender and sexual preference, then explore the personality and sensual nature of the user.

The questions are lighthearted com-



pared to those in *Interaction* (although there is some overlap), so this could be used in an adult's party or social gathering. The personal analysis scores the individual in 10 categories, measuring sensuality and openness in percentage points. The compatibility check uses the same parameters, then displays each person's "score" on a bar chart. The computer will also search its records of all the completed surveys on the disk, to select a matching personality. This last option may be good for some laughs at your next party.

The real paydirt is the Love Quest. A code number is created from information input in the survey, which can be transmitted back to IntraCorp for entry into their data bank. This code number is matched against the others registered there. The purchaser can receive three free contact names drawn from the bank, and additional contacts for $15 each. Some folks included in this bank of users permit their names and addresses to be released. Others may be contacted through IntraCorp mail forwarding, a service that costs $10 to set up, and $2 for each piece of mail.



The Love Quest National Data Base was originally started for respondents to a survey done by *Playgirl Magazine* a couple of years ago. Since that time, purchasers of the program have been added. IntraCorp won't guarantee the size of the databank, though company sources say there are currently about 2000 names. Naturally, IntraCorp makes no guarantee of success in the search for love, and assumes no liability for the consequences.

The three programs share more than their subject matter. All three were originally designed for other systems, and their manuals reflect this. More to the point, the translation of the programs to Amiga format did not include any updating to make use of the capabilities of the newer machine. There are no graphics, except for simple title screens, and the mouse interface is hardly used. It's a pity the company didn't make a few changes to modernize the programs.

However, the psychological research that underlies all three is very solid. The database of users, though, is of questionable value, since many of the older entries may now be outdated. Some people may have since changed addresses and phone numbers, as well as their minds about this kind of introduction. But computer matchmaking services intrigue most curious people, and this is one that is easily accessible by stay-at-home computerists.

Most important of all, the information contained in each is timeless. *Birds 'N Bees* takes the place of the sex information manuals kids used to comb. *Interaction* is a very serious tool for examining your own feelings. *The Love Quest* is a cute compatibility tester for social gatherings, and puts adventurous users in touch with each other if they choose to explore this avenue.

When you come right down to it, that's a whole lot of love on disk!

IntraCorp, 14160 SW 139th Court, Miami, FL 33186 (phone: 305-252-9040).



But, hey—how about that box design!

PHANTASM
Exocet/Scorpion
Amiga with 512K
Disk; $34.95

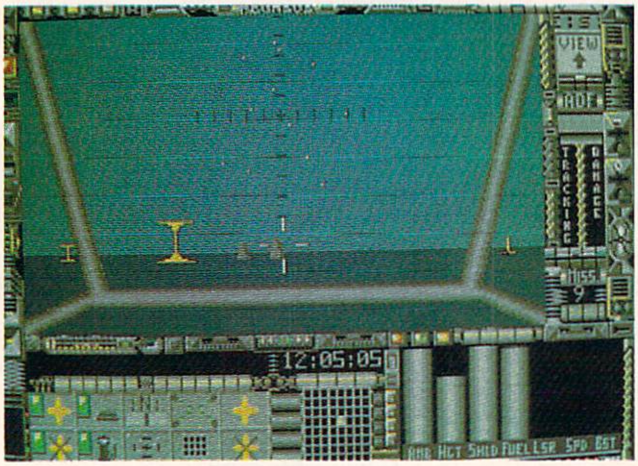
There's a lot of originality and imagination lavished on this one-player combat flight simulator. Too bad the publisher squandered most of the creativity on the package carton, leaving very little for the actual game.

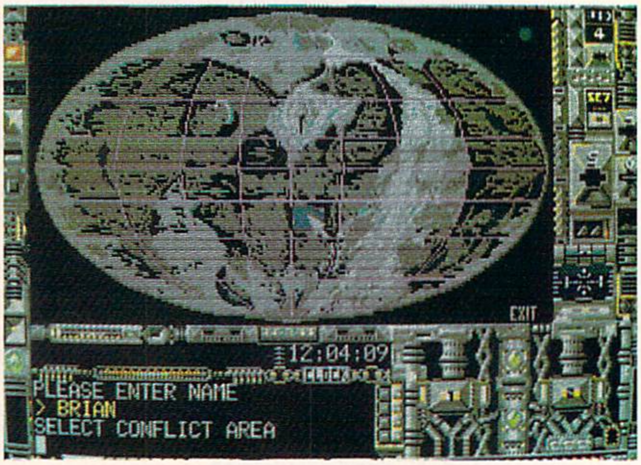
According to the briefing on the box, the player is a drifter who is suddenly whisked into the future and placed in command of the HMS Pegasus. This powerful fighter plane cruises over the surface of the moon and destroys eight "re-constitutions" found there. Naturally, there are plenty of enemy ships around to prevent the Pegasus from achieving this goal.

The program depicts the relatively featureless moonscape in first-person perspective. Objects grow larger as the craft approaches them and disappear when the Pegasus shoots past. The artwork is reminiscent of *Battlezone*, except that the objects look more solid because of the Amiga's ability to fill large areas with color. Keystroke commands allow the player to see the areas to the left or right without changing actual direction of movement.

The control panel borders the view screen on three sides. The pilot can see the current status of shields, fuel, boosters, anti-missile blaster, and height at a glance. A cylinder represents each of these factors. The cylinders grow or shrink to reflect changes. The panel also includes a compass, a radarscope to pintpoint the ship's position in the

Featured This Month:





Phantasm *depicts the moonscape in first person perspective. The control panel borders the view screen on three sides.*

sector, an automatic directional finder, a missile counter, and a few other little gauges and meters.

Players control the Pegasus with either the keyboard or a combination of keyboard and joystick order entry. In the latter case, the joystick governs speed, left-right movement and the laser gun.

The control scheme inadequately handles altitude. It uses the "H" key to increase the ship's height and the "G" key to lower it. This system is not only awkward to use, but it does a very poor job of simulating the experience of flying a futuristic fighter plane.

Aside from the lack of originality, that is the biggest problem with *Phantasm*. It just doesn't *feel* like a supersonic fighter, and that is a mortal sin for a computer flight simulator. The Pegasus is more like a tank than something capable of zooming through the atmosphere.

A tutorial mode makes up for extremely scanty documentation. The computerist can run through the game without worrying about getting killed. A special feature identifies each object as it appears on the screen. It is strongly recommended that gamers try at least one round at this setting before proceeding to any of the three progressively more difficult levels of play.

Like too many British-designed games, *Phantasm* has little that cannot be found in earlier programs of the same general type. It is competent work, but nothing more.

Exocet, c/o Scorpion, 19 Harbor Drive, Lake Hopatcong, NJ 07848 (phone: 201-663-0202). *–Arnie Katz*

POWER STYX
DigiTek
Amiga with 512K
Disk; $34.95

Hardware grows more powerful and programmers discover amazing new implementation techniques every day. The newest software titles inevitably make last year's award-winners look and sound feeble by comparison.

Yet despite all the progress, all the improvements, the classic games endure. Today's versions have better audiovisual trimmings, and the rules are often more sophisticated, but the core of the game remains the same. For example, *Blockbuster* is a direct descendent of *Breakout,* and *Into the Eagle's Nest* features essentially the same play action as *Castle Wolfenstein* or even the trailblazing coin-op *Berzerk.*

Fans of *Qix,* the classic arcade and video game, will be in seventh heaven when they behold *Power Styx*. This mind and body challenge has a play-mechanic very similar to its inspiration, but the graphics and music are on another, higher plane.

The European design team has transformed the sparse, drab look of the *Qix* playfield into a visual symphony of multicolored, kinetic images. The driving beat of the rock soundtrack, another delightful addition, reinforces the game's high excitement level.

A joystick operates the diamond-shaped cursor in this game of territorial acquisition. Initially, the rectangular playfield is blank except for a line of brightly colored rectangles which snakes around the featureless display.

The player guides a pulsing diamond along the edge of the rectangle with the joystick and presses the action button to change its direction of movement. The player steers the symbol to create a path that encloses a portion of the screen. One side of the resulting polygon must be part of the perimeter of the playfield or another, previously



The playfield of **Powerstyx** *is a visual symphony of multicolored kinetic images. The driving beat of the rock soundtrack reinforces the game's high excitement level.*

drawn area.

Creating an area reveals a piece of the full-screen illustration hidden behind the playfield. The entire drawing appears as soon as a large enough portion of the playfield's surface is covered. The solitaire gamer can examine the illustration before advancing to the next round of play.

The whirling and swooping line of geometric shapes poses the greatest threat to the three lives with which the gamer begins play. The rovers destroy the cursor if they touch while the computerist is fencing in a new area.

Cowering at the edge of the playfield would be safe, except for the deadly pursuers who zip along the lines and eliminate the cursor on contact. The gamer earns 100 bonus points whenever one of the line-runners is trapped on the edge of a newly completed polygon. Unfortunately, these pests regenerate quickly, so action is constant until the round ends.

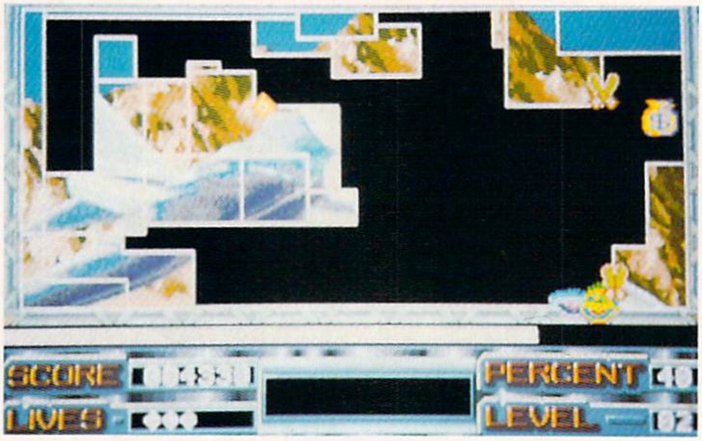
Power Styx also introduces bonus and penalty objects which float across the playfield from left to right. If the player catches one of these items before it leaves the screen, he reaps the reward or endures the adverse effect. The consequences range from an instant win to the loss of a cursor. Other possible results include faster cursor movement and extra points.

Abstract action-strategy games for the Amiga are about as plentiful as snowballs in the Amazon jungle, so a beautifully produced product like *Power Styx* is especially welcome. It enhances the play-mechanic *Qix* fans adore with the art and sound of today's discriminating computerists demand.

DigiTek, Inc., 10415 N. Florida Ave., Suite 410, Tampa, FL 33612 (phone: 813-933-8023).

–Arnie Katz & Bill Kunkel

Circle #223 on Reader Service Card



Enclosing an area of the Powerstyx *screen reveals a piece of the full-screen illustration hidden behind the playfield.*

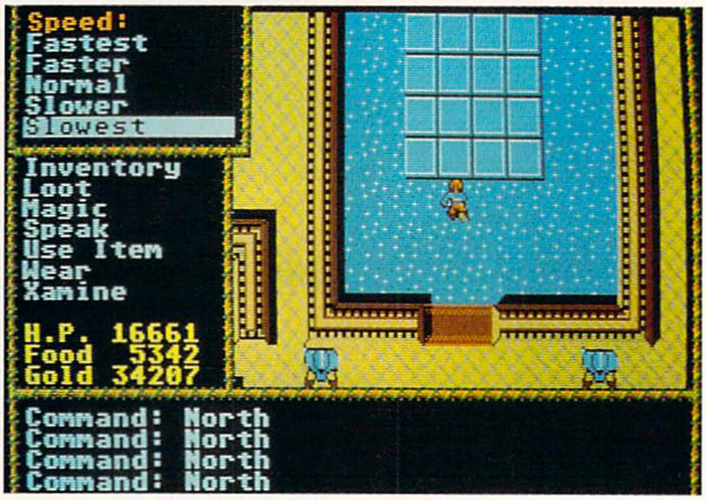
QUESTRON II

Strategic Simulations
Amiga with 512K
Disk; $49.95

The stirring climax of *Questron* did not end the menace posed by The Evil Book of Magic. Although the villainous wizard Mantor met defeat in that fantasy roleplaying adventure, the book is indestructible.

In *Questron II*, designed by John and Charles Dougherty with Westwood Associates, the good wizard Mesron sends the player's character into the past to prevent the creation of the evil tome. Only by confronting the ultimate evil of Mantor can the computerist stop six mad sorcerers from completing The Evil Book of Magic.

The adventurer gains experience while gathering the items needed for the assault on Mantor's well-fortified lair. By fighting the 60 monsters which inhabit this dark realm and scooping up treasure, the character earns enough points to rise in ability level. This, in turn, increases one or more of the hero's key characteristics.



The Questron *command control setup, its most important design improvement over the basic* Ultima *game system, means highlighting a choice from a list.*

Time-hopping has the unfortunate side effect of stripping the character of all the abilities and possessions won with so much difficulty in *Questron.* The computerist begins this perilous quest in a weak and virtually destitute condition.

The gamer needs as much native talent and equipment as possible for the final showdown. Mantor's relentless attacks burn up an unbelievable number of hit points.



The drawings of the automobiles in Crazy Cars *are exquisitely detailed, and the images hold together well even during hairpin turns.*

It is interesting to see how the Doughertys' games diverge from Lord British's *Ultima*. The original *Questron* utilized the *Ultima* system under license from Origin Systems, but the thematic content of the two series couldn't be more different from each other! Lord British has become more philosophical with each *Ultima,* but *Questron* and *Questron II* are totally devoted to sword and spell battles.

The graphics in *Questron II* are more varied and attractive than in the first installment of the saga. It uses three different screen presentations to follow the hero's struggle to rid the world of The Book of Evil Magic.

Colorful terrain maps chart travels through the threatening countryside; overhead perspective views follow the character into towns and castles, and a first-person display depicts excursions into the creature-filled dungeon. When the character prowls the passageways of one of the underground mazes, the screen provides a secondary, overhead view to help the computerist keep his bearings.

The *Questron* command control set-up, its most important design improvement over the basic *Ultima* game-system, remains a pleasure to use. The computerist highlights a choice from a list of options printed on the left side of the screen and confirms it by pressing the left mouse button.

Exploration and combat dominate *Question II*. Puzzles, which are violently disliked and fervently adored by equal numbers of computerists, are virtually absent. Though *Questron II* is likely to entertain most fantasy adventure gamers, it is essentially good for novices. There are a few bottlenecks to stall progress toward the inevitable slugfest with Mantor.

Questron II is not the most sophisticated interactive adventure on the market. The story furnishes a good rationale for the hacking and spellcasting, but *Questron II* does not grapple with weighty issues or arouse deep emotions.

It's a sword and sorcery epic that crackles with combat action and narrow escapes from grisly death. Go elsewhere for a demanding test of adventuring skill, but visit the land of *Questron* if you want a rousing good time.

Strategic Simulations, 1046 North Rengstorff Ave., Mountain View, CA 94043 (phone: 415-964-1353).

–Arnie Katz

Circle #226 on Reader Service Card

CRAZY CARS
Titus Software
Amiga with 512K
Disks; $39.99

Six different courses comprise the American Cross Country Prestige Cars Race as depicted in *Crazy Cars.* The solitaire driver begins the first section, Florida, with a Mercedes 560. Completing the courses before time runs out earns drivers better cars, including the Porsche 911, Lamborghini Countach, or even a Ferrari GTO.

Each section of the course is raced against the time clock located at the top of the screen. Finishing before it reaches zero allows the computerist to progress to the next leg of the journey. Collisions with other cars and running off the road on turns are the main obstacles to crossing the finish line in time.

The control system is extremely simple. Pushing the joystick forward is like stepping on the gas pedal, and pulling it straight back applies the brake. Pushing the joystick to the left or right moves the car in the corresponding direction on the track. The action button is used only to start each segment of the transcontinental trip.

Olivier Corviole's graphics are a little unusual, more impressionistic than realistic. The quality, though, is only middle-of-the-pack compared to other programs of the same general type.

Each section of the mega-course has its scenery. For example, the "Florida" section features such familiar sights as Disney World.

The player's car occupies the center of the screen. The program shows the action in modified first-person perspective, from a point directly behind the racer. The drawings of the automobiles are exquisitely detailed, and the images hold together well even during hairpin turns and roller coaster bumps. This has often been a problem with other driving games.

The question veteran gamers may ask about *Crazy Cars* is whether it is crazy enough after all these years of driving games. Eric Caen's programming is excellent, but the quality of his design work is open to question. *Crazy Cars* lacks the essential spark of originality which would elevate it above the driving games which preceded it to market. Those who don't have an auto racing program for their Amiga should definitely consider *Crazy Cars,* but it is otherwise recommended primarily to those who are especially fond of driving contests.

Titus Software, 20432 Corisco Street, Chatsworth, CA 91311 (phone: 818-709-3692).

–Arnie Katz

Circle #230 on Reader Service Card

Next month in our Entertainment Software Section:

THE BEST AMIGA GAMES OF 1988

Software and Applications for the Small Businessman

By Ted Salamone

Welcome to another edition of *Exec File.* This issue we'll conclude the Software Selection Criteria Guideline, and discuss several graaphically oriented packages.

To pick up our story where we left off... Section III of the Selection Criteria covers Documentation, or the lack thereof. To start, simple counts are tallied for total number of manuals and total number of pages per manual. Existence of tables of contents and indices are likewise examined; provision of sectionalized tabbing and a pullout reference card (for quick, accurate referencing) is checked.

Inclusion of a comment (bingo) card for developer feedback, appendices, a glossary, and a bibliography complete the Yes/No portion of the Documentation Section.

The type of binding is explored because some are more user friendly than others (looseleaf); some make it difficult to read while your hands are otherwise occupied (glued like a paperback novel); and others make updates difficult (spiral bound). Unfortunately, the negative characteristics mentioned are not limited to just the types mentioned—each type of binding, other than looseleaf, generally has several problems. Unless the looseleaf has nonstandard hole punches, it is the best for overall ease of use.

The quality of a program, and often the overall support provided by a company, can be determined by the layout and print characteristics of the manual. A photocopied manual does not bode well, and may even indicate "bootleg"; dot matrix indicates a small shop with severely limited resources. The same can be said for daisy wheel or typed materials.

Up one level lies laser printed documentation. While this is not truly professional, it does indicate a credible level of resource, particularly if the documentation is well laid out—graphically speaking. The highest level, naturally, is typeset. Generally, the higher the documentation is on this hierarchy, the higher the price of the software involved.

You should rate the documentation for severity and frequency of typographic errors, note the degree of error message explanations, and examine the depth and number of sample exercises/tutorials.

Use of illustrations, screen dumps, and sample printouts/reports usually indicates a high degree of functionality and documentation usefulness. The documentation should also be rated on the basis of its installation/setup instructions, its usefulness as a reference guide, its overall clarity, and its organization.

While this list may seem a bit compulsive, the best decisions are made when fully informed. Keep that in mind throughout the entire evaluation process.

Section IV is just a list of special features or functions not covered under one of the more specific headings. Think of it as a catch-all basin where you can even list general drawbacks. No one said features or functions have to be positive, especially if they are poorly implemented.

Customer support gets scoped out in Section V. Does the dealer provide support; does the vendor; do both? Is there telephone support, and if so, is it an 800 number, a toll call, or collect?

The evaluation prompts you to list the hours and days of support service and the extent of the warranty. If the program is copy protected, is a backup provided free with purchase, or is it available from the vendor (etc.) for a fee? If so, how much?

Are updates available? What is the program's update history, and how much do they cost? In a related vein, what is the defective product policy, return to the dealer or to the vendor? How long do you have?

All these are very important issues. Which ones are most important for you depend upon your purchase and locational circumstances; that is, mail order versus computer storefront purchase or 3 stores in 2 blocks versus 75 miles from the nearest dealer, etc.

Section VI asks a few questions about training. What type is available, if any; classroom, on-site, videotape, etc.? Is it technically or end user oriented? How many free hours are offered, if any? What is the cost of additional training (beyond the free hours if available) or basic training if there is no free ride? What types of learning materials are provided—manuals, audiotapes, etc.?

The final section covers the rating process. Just remember, any system you are comfortable with can be implemented in lieu of the one described here.

Basically, the scores are summed by categories such as command/input structure, help screens, support and special features, etc. Even these categories can be adjusted to reflect areas of more import. The overall sum is then matched against a chart to determine level of satisfaction with the program.

There are still a few copies of the Selection Criteria available for $9.95. Send check or money order to the address at the end of this article and mark the outside of the envelope "SSG" for faster service.

TIPS 'N TRICKS

From the general to the specific:

1. For readers who are interested in video and who can afford the best, check out the Sony still video cameras. They produce higher quality images than the more traditional

InterComputing Inc.

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"movie" cameras, further enhancing the Amiga's already astounding capabilities. With the (rumored) soon to happen emergence of an extremely high resolution monitor like the Sony 19" color display for the Mac II, video stills will be even more impressive.

2. I've heard from several people who are interested in using DTP programs like *Professional Page* or *Shakespeare*. They don't have any background in the graphic arts and feel at a loss as to a starting point. Just booting the software doesn't help because they don't understand picas, points, color seps, etc. So, my recommendation is to pick up the *Complete Guide to Pasteup* by Walter B. Graham, published by Dot Pasteup Supply Company. Most large bookstores carry this useful primer into the whats and wherefores of the manual system and terminology that lie behind electronic publishing.

3. When using Electronic Arts' *DeluxePaint II*, or any paint program with similar functions, you can alternate between the Shade and Blend commands to produce a brush which creates highlights at appropriate points on your masterpiece. Basically, you draw an object, fill it with a dark color, and then select a lighter color. Pick a brush which fits the desired level of detail (how much of an area you want to highlight or burnish) and activate Shade mode. Move the brush to produce the highlight, switching back to Blend to capture color from the surrounding area—for when the highlight becomes too light.

This is quite useful when producing objects or text that need to reflect the effects of light sources, or to create that worn down look. It can also be handy when producing a pseudo-perspective look, sort of a fake 3-D look that simulates a distant horizon. Consider the possible uses and effects of passing a darker color over a lighter one. Do I hear Halloween and spooky images calling?

THUMBNAIL REVIEWS

First up this month is Broderbund's *Fantavision*, an animation program which comes to the Amiga courtesy of the Apple II. Broderbund has optimized the program for the Amiga. Pull-down menus, icons, mouse maneuvers, everything Amigaphiles expect is here. *Fantavision* does not suffer from "translationitis," despite its origins.

In a nutshell, all resolution modes are supported, a maximum of 32 colors can be used simultaneously, audiovisual data is stored in standard IFF structure, and it generates up to 128 "tweens."

It has been the most recent hit in the office because it is so easy to use; yet it still produces eye-popping effects. (We have been known to leave the Dinosaur demo running for an entire day.)

Sporting a better interface than Aegis' entry into the animation market, providing more powerful tools, and having the ability to create run-time demos (not requiring the full program), this is a surefire marketing and presentation tool for small businesses that want to make a lasting impression.

The overscan mode makes this a powerful entry in the professional's toolbox as well. Quick, very sharp looking product and company demonstrations can be created for clients in much less time than it takes to create manual storyboards alone. Blow the images to a VCR or slides, and we're talking significant moneymaking propositions.

While discussing imagery, let's move on to *Deluxe PhotoLab* by Electronic Arts. This program is really 3-in-1, like the oil. It has an almost *DeluxePaint II* paint program, a poster routine which allows you to print mini-billboards up to 10 feet square, and an image processor.

While the first two routines are good, the heart of *DPL* lies in the image processor. With it users can cross-tabulate and control R(ed), G(reen), B(lue) colors with H(ue), S(aturation), V(alue), and Y(ellow), C(yan), and M(agenta). Palettes may be matched across images, colors melded, negative or black & white images produced—from menus!

Small advertising agencies or layout departments in companies will go wild over the color separation and color comp capabilities. The ability to merge and color-coordinate disparate images is another boon whose importance and contribution to creativity cannot be fathomed until you actually use the program.

Another EA entry, *Deluxe Productions*, follows. As *PhotoLab* overlaps some of the functions found in *DeluxePaint II*, *DProd* offers some of the functions in *DeluxeVideo*. This overlap raises issues of product focus at EA, perhaps traceable to the programs' origins with different developers who are assisted and published by EA. In the end this blurring between products does not diminish *DProd's* or *PhotoLab's* effectiveness, it just makes me wonder what "mix" product will appear next. (To give you an indication of how hot this program is, a client of ours is reviewing it for tips on the next generation of their IBM PC products.)

Business presentations, broadcast titling and overlays, computerized slideshows—they're all at your fingertips courtesy of *DProd's* twin buffering, overscan display mode, VCR playback mode, and (special effects enhanced computer screen) slideshow playback mode.

Simple animation is allowed to a limited number of objects, scripts can be chained together, and all disk data is checked for integrity before playback—to prevent embarrassment or worse due to a faulty presentation.

The program comes pretty well equipped with graphic symbols and fonts. An attempt to make it more business-oriented comes in the form of a hard disk loader utility. While thoughtful, it would be easier if you just moved the icons to a drawer.

Since video images can be introduced with graphic overlays, there are virtually no limits as to the people who can benefit from this program. Car dealerships, television stations, video professionals, sales, marketing, and advertising departments and agencies—the list is practically endless.

Promotion (selling) is the key to success, and that's why *DProd* shines. It brings sexy communication within the reach of the masses.

All the programs mentioned here passed the basic usage tests; they are reliable and fundamentally easy to use, considering their categories. (In other words, they're not word processors.) The worst offender was *DProd*, and not in the performance area. Its interface, nothing like *DVideo's*, is too "IBM PC-like" in areas of major import.

Stay tuned and keep in touch. Address all correspondence to Salamone & Associates, 42 Canterbury Road, Bridgeport, CT 06606. □

EYE ON CLI

Understanding and Using the Command Line Interface

BEGINNING BATCH

By Richard Herring

Last month, we began our look at AmigaDOS batch files (a.k.a. script, sequence, and command sequence files). By examining the Startup-Sequence file in the S directory of our Workbench 1.2 disks, we got a brief introduction to the power of batch files. This month, we will review a few customizing tricks to make Startup-Sequence more productive and more powerful. Then we'll begin our discussion of batch files that we can call up when we need them, not just when we reboot.

One of the easiest ways to match your Amiga to your needs is to make some simple changes to the Startup-Sequence batch file. Let's use a typical system—an Amiga 500 with 512K to 1 megabyte of RAM and 1 or 2 floppy drives—as an example.

Once you start customizing Startup-Sequence, you may have a hard time stopping. There's always some reason to tweek it to load faster, meet your changing needs, or include some utility. As you edit and re-edit, you will get tired of typing Startup-Sequence, believe me. So let's create an executable batch file to save some keystrokes.

You cannot call Startup-Sequence anything else, because DOS looks for that specific name on rebooting. An easy fix is to RENAME Startup-Sequence TO SS and then create a new Startup-Sequence file that contains the single command EXECUTE SS. Now when you use ED or NOTEPAD or your favorite word processor to fine tune that initial batch file, you can refer to it simply as S/SS.

After renaming SS, here is an easy way to create a new Startup-Sequence. Type:

```
COPY * TO DF0:S/Startup-Sequence <return>
EXECUTE SS <return>
<Ctrl>/
```

The COPY command reads from the current CLI window (represented by *). Anything you type will go into the new file you are copying to. The last line (press the backslash while holding the control key) is an end-of-file character.

Our SS batch file, along with all our other batch files, will reside in the S directory of the Workbench disk. Remember from our discussion of ASSIGN a few months back that the Amiga automatically assigns the S: logical device to the S directory. EXECUTE looks for batch files in the S: device, so that's where we will put ours. There are, of course, a variety of ways to get around this. For example, EXECUTE can find batch files in the current directory, or we can reassign S: to a different directory.

As you customize your new file SS, keep two things in mind. First, because rebooting is something we all hate to sit through, design your SS to get its business done as quickly as possible. It seems to help to use full pathnames whenever referring to a disk file. This also helps to document SS. You will want to use as few commands as possible from a floppy—a RAM: disk is much faster. And you can delete all unnecessary comments—both loading the ECHO command and outputting text to the screen take time.

Second, be cautious about how you use up RAM. As we begin to explore with the CLI, we will find all kinds of nifty utilities. Many of them take up precious memory. You can build an SS file that will chew through the available memory on even a beefed up system. Test utilities for a while to see if they are really useful to you. Then decide whether you want them every time you boot up.

To show that I try to practice what I preach, here is the SS file on a disk I often boot from.

```
SYS:C/echo ""
SYS:C/ECHO "Creating small RAM: disk."
SYS:C/MAKEDIR RAM:C
SYS:C/COPY SYS:C/COPY|ECHO|WAIT TO RAM:C QUIET
RAM:C/ECHO ""
RAM:C/ECHO "Loading BlitzFonts and Blank."
SYS:BlitzFonts
SYS:Blank
SYS:SYSTEM/SETMAP usa1
SYS:C/SETCLOCK OPT LOAD
RAM:C/ECHO ""
RAM:C/ECHO "Putting DOS 1.2 files into RAM: disk."
RAM:C/ECHO ""
RAM:C/ECHO "Press Ctrl-D to abort copy to RAM:"
RAM:C/WAIT 2
SYS:C/ASSIGN C: RAM:C
COPY SYS:C/ASSIGN|CD|DELETE|DIR|ED TO RAM:C QUIET
...
ASSIGN X: RAM:C/EXECUTE
...
COPY RAM:C/DELETE TO RAM:C/DEL QUIET
...
ECHO ""
ECHO "Loading Workbench."
ECHO ""
ECHO "Press Ctrl-D to abort loading Workbench."
WAIT 2
```

```
SYS:C/LOADWB
```

Since I have a meg of RAM, I'm always willing to have at least a small RAM: disk with a C directory containing the COPY, ECHO, and WAIT commands. This is solely to make SS run faster. Depending on how you structure SS, you may actually save time by copying files into RAM:, using them while the Amiga boots, and then deleting them to recover memory. A command like ECHO, that could be loaded many times by SS, is a good condidate for such a process.

Next in my SS are two of my favorite memory-resident utilities. *BlitzFonts* will speed up the display of characters on your screen by up to 600 percent. It is a $10 shareware program by Hayes Haugen that uses about 3500 bytes. *Blank* is a utility that causes your Amiga's screen to go blank after a period of inactivity (keyboard, mouse, or disk). By turning the screen solid blue, it prevents any image that is left on screen for long periods from "burning in" and leaving a ghost. It defaults to 5 minutes, but you can set any time you want. Kenneth Chiu, *Blank's* creator, packed this into less than 200 bytes.

I usually follow up with a RAM:C full of CLI commands, including those in the listing above and ENDCLI, EXECUTE, INFO, LIST, MAKEDIR, NEWCLI, RENAME, RUN, STATUS, TYPE, and WHY. Before all these commands are copied into RAM (and later, before Workbench is loaded), SS gives me the option to halt, or break, its execution by pressing Control-D. My SS leaves about 751K free. By comparison, loading Workbench and the CLI without a RAM: disk leaves 849K free, and loading Workbench only leaves 856K.

Once SS gets around to actually copying commands, it saves some time by putting several filenames on each COPY command line. As long as the filenames are separated, or delimited, by the vertical bar, COPY will act on each of them. The vertical bar is a shifted blackslash above the return key. Note here that you cannot type an infinitely long series of filenames. Somewhere around 28 characters seems to be the limit.

Now I don't like typing long CLI commands any better than I liked typing Startup-Sequence. You see that there are two solutions. First is to ASSIGN short logical device names to long filenames. Thus, RAM:C/EXECUTE becomes X:. (D: for DELETE is another prime candidate.) Because I use other computers too, I am prone to forget to add the colon that ASSIGN's logical device names must end with. My second option, which eats a bit of RAM, is to make a copy of the command under another name. Thus, both MAKEDIR and MD exist in my RAM: disk. This is okay for very small files like RENAME (REN) and MAKEDIR.

Why not RENAME such files to the shorter filename and save some RAM? That works–sometimes. However, it can be confusing to someone else who uses your computer and can't understand why that good AmigaDOS command does not work. Even worse, it can confuse programs you run that may need those DOS commands but do not know your shorthand.

For the EXECUTE command, there is another interesting way to avoid typing. Kamm Schreiner's public domain program *Auto Execute* will allow a batch file to execute by just typing its name at the CLI prompt. Batch filenames must end with the .BAT extension and be placed in a BATCH directory. Each such batch file requires the presence of an additional 6K file on your disk to allow it to run without EXECUTE.

We have pretty well beaten Startup-Sequence into the ground, so let's talk about batch files in general. As we saw last month, two types of commands are found in batch files. First, any command that can be typed at the CLI prompt, 1 >, is fine in a batch file. This includes AmigaDOS commands and executable files like commercial programs.

Second, a number of commands can be used in batch files that don't work (or don't have any value) when typed at the CLI prompt. These include the AmigaDOS commands (from the C directory) that are designed for use in batch files: ECHO, WAIT, IF, ELSE, ENDIF, FAILAT, LAB, SKIP, and QUIT. Let's also include here the keywords used by IF: EQ, NOT, EXISTS, WARN, ERROR, and FAIL. And we will become familiar with directives that are used when you pass arguments from an EXECUTE command line to a batch file. These each begin with a period and include .KEY (or .K), .DEF, .<space>, .BRA, .KET, .DOLLAR (or .DOL), and .DOT.

We cannot digest that many commands, keywords, and directives in one sitting, so we'll spread the discussion out over bite-sized columns. This month let's look quickly at some of the power available to us.

Here's the scenario. We have a word processing program, WP. Documents we create are saved in the TEXT directory of the WP: disk. As major projects are finished, we like to copy them onto a disk called ARCHIVE:. Then we delete them from WP:TEXT to free up disk space. To save typing, let's use the following batch file, which we will name ARCHIVE and put in the S directory of the WP: disk. We can use it by typing EXECUTE ARCHIVE <filename>.

```
.KEY filename
; This is the ARCHIVE batch file.
IF <filename>A EQ A
  ECHO "You must give me a filename in the format
        EXECUTE ARCHIVE filename"
  SKIP bailout
ENDIF
IF EXISTS ARCHIVE:<filename>
  ECHO "Sorry, <filename> already exists on ARCHIVE: I
        don't want to overwrite it."
  SKIP bailout
ELSE
  IF EXISTS WP:TEXT/<filename>
    ECHO "Copying <filename> from WP: to ARCHIVE:"
    COPY WP:TEXT/<filename> TO ARCHIVE:
    ECHO "Deleting <filename> from WP:"
    DELETE WP:TEXT/<filename>
  ELSE
    ECHO "Sorry, I can't find <filename> in the TEXT
          directory of WP:"
  ENDIF
ENDIF
LAB bailout
ECHO END
```

The first thing we do is pass the parameter <filename> from the EXECUTE command line to the ARCHIVE batch file. How does the batch file know to look for <filename> on the command line? It knows because the first line in ARCHIVE tells it to substitute the value (word) you type after EXECUTE ARCHIVE everywhere the parameter name <filename> occurs in the batch file.

The first IF/ENDIF checks to make sure that a filename was typed on the EXECUTE command line. If nothing was typed, it shows you the format and SKIPs to the end of the batch file. EQ compares two strings of characters. If they are the same (case is ignored) the command on the line following IF is executed. EQ must have two strings; it cannot compare your entry to a blank (or " "). That's why we add an A to <filename>. If the filename we enter plus A equals A, then no filename was entered.

Next are two IF/ELSE/ENDIF structures, one nested inside the other. (The indentation here is for clarity only. When you type this batch file, do not indent.) The first IF tests whether a file with the same name as the one we want to archive already EXISTS on the target disk. If it does, we SKIP to the end of the batch file.

The SKIP and LAB commands work together. Whenever a SKIP command is executed, the batch file will jump to the LAB with a label matching the one for SKIP and continue from there. This is similar to BASIC's GOTO except that SKIP cannot jump backwards in the batch file.

The second IF/ELSE/ENDIF will execute only if we have typed a filename and it does not exist on the ARCHIVE: disk. The file will be copied to the target disk and deleted from the source disk. We will be warned if the batch file cannot find the file on the source disk.

A couple more comments and we'll wrap up for this month. In the second line of the ARCHIVE batch file is a non-printing line beginning with a semicolon. Such comments are good ways to document more complicated batch files.

Did you notice that the last ECHO command did not use quotation marks? If ECHO is followed by a single word, it does not require them.

On a one-drive system, this batch file requires too much disk swapping. Can you restructure it, by copying files to the RAM: disk, so that only one swap is necessary?

The shareware and public domain programs mentioned this month are by the following folks:

BlitzFonts	*Blank*	*Auto Execute*
Hayes Haugen	Kenneth Chiu	Kamm Schreiner
11303 S. Dogwood	2921 Bagley Drive	1666 Silver Fox Circle
Edmonds, WA 98020	Kokomo, IN 46902	Apopka, FL 32712

These programs are widely available in user group libraries and on Amiga bulletin boards. If you can't find them, send me a formatted disk and return postage and I will gladly make you a copy. Remember, you can also get a free public domain disk by sending a unique CLI tip to me at P.O. Box 1544, Tallahassee, FL 32302. ☐

AMIGA TOOLBOX

Send your short routines and programming or hardware hints to *Amiga Toolbox*, c/o *Ahoy!'s AmigaUser*, Ion International Inc., 45 West 34th Street–Suite 500, New York, NY 10001. Include the program and source code on a 3½" disk, along with documentation and a printout. If programming in a language other than Amiga BASIC, specify the compiler used and the manufacturer.

MOUSELESS AMIGA

Few people realize that the Amiga can be used without a mouse. Although awkward, the following key combinations will have the same effect. Pressing either of the two Amiga keys and a cursor key simultaneously will move the pointer in that direction. Pressing the left Amiga-Alt combo has the same result as pressing the left mouse button, while the right Amiga-Alt combo does the work of the right mouse button. –Michael R. Davila

SAVED ICON

When working with Amiga BASIC you may eventually decide to create a custom icon for a program you wrote. The problem is, if you edit the program and resave it you lose the custom icon. Some solutions have been to rename or copy the .info file to some other name and then afterwards restore it to the original name. I have another way.

1. Open whatever window the program's icon is in, then run the program by double clicking on its icon. *Do not close this window!*

2. After editing and resaving the program, go back to the window you run the program from and find its icon. Now make a snapshot of it, and when you close and reopen the window, the designer icon will still be there.

–Matthew P. Cummings
Moberly, MO

ASCII EDITS

Don't forget that Amiga BASIC can load and save programs as ASCII text files. Among other things this means that you can use your favorite editor/word processor to enter and debug programs. Many people don't like the lack of a find/replace capability in the basic editor. Try using the one in your text editor. Don't forget that if you have enough memory you can use both BASIC and the word processor simultaneously.

The syntax to save a BASIC program as an ASCII text file is save "filename",a. This capability also allows you to use the word processor's print formatting capabilities to your advantage when getting printouts of your BASIC programs.

–Paul Maioriello
Manalapan, NJ

CLI BASIC LOADS

You can pass the name of a BASIC program to run to an argument to a program. For instance, from the CLI, typing "amigabasic myprogram" will cause Amiga BASIC to be loaded and myprogram to begin execution. You can achieve a similar effect in Workbench by assigning Amiga BASIC as the default tool to be invoked when your program's icon is double clicked. This can be done using the INFO option of the Workbench menu. After you have done this, double clicking on the icon will automatically cause Amiga BASIC to be loaded and your program to begin execution as before. –Paul Maioriello
Manalapan, NJ

AMIGA BASIC EASY LIST

It can be very cumbersome to move around in a large BASIC program using the editor because the screen updates are rather slow. Here are a few tips to make the situation a little easier to bear.

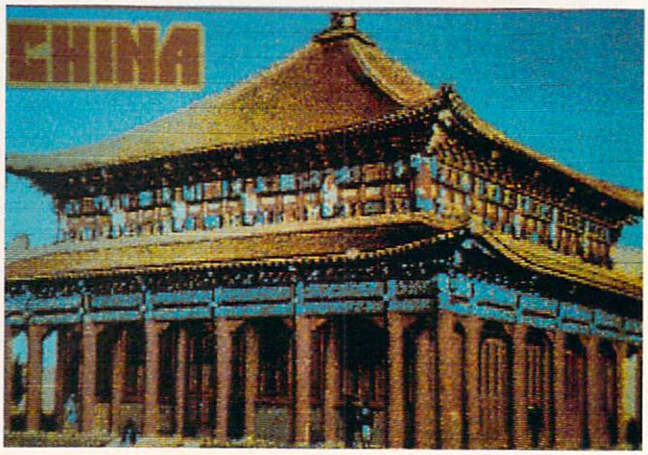
You can move to any subroutine immediately by entering "list subroutine-name:" in the basic output window. Using the ALT keys in conjunction with the up and down arrow keys immediately positions you at the beginning or end of a file. The SHIFT key in conjunction with the up and down arrow keys move you up or down an entire page in the program. The left/right keys can also be used to effectively move the cursor in conjunction with the SHIFT and ALT key. You can also make the listing window as small as practical, since the smaller you make it the faster it will be refreshed as you move about in your program.

–Paul Maioriello
Manalapan, NJ

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PHOTOS: MICHAEL R. DAVILA

A few of the pictures included in the demo portion of **Lights! Camera! Action!** *to demonstrate special effects like dissolves, flips, and fades. They're reproduced here purely for their considerable aesthetic value.*

LIGHTS! CAMERA! ACTION!

Aegis Development Inc.
Amiga with 1 megabyte
Two disks; $79.95

Desktop video is among the newest of computer applications, one that barely existed before the Amiga. Because it is new, it might be wise to explain what it is and what its uses are.

In its simplest sense, desktop video replaces the slide projector. Instead of struggling with a projector and a screen when making a presentation, you struggle with a computer monitor. Alternatively, if there is a computer at the presentation site, you simply take a disk with you. In our slide projector analogy, if a projector and screen were at the presentation site, you'd carry one or two trays of slides with you; and the lesser bulk of a 3.5" disk would seem to make desktop video a clear winner in this respect.

Actually, DV wins the struggle much earlier than that point, for it can replace not only a single slide projector but an entire multimedia setup, utilizing such features as split-screen, fades, dissolves, wipes, and a mixture of still frames and animation. Plus, in the better programs, synchronized sound.

All this, of course, is by way of providing background for *Lights! Camera! Action!*, a new desktop video product from Aegis Development. In the short history of DV, the principal software



packages have been *Aegis Animator,* with which you could create short animated sequences; *Deluxe Video* from Electronic Arts, with which you could create and link short sequences with sound (at the cost of complex controls); *Deluxe Productions* from EA, which gives the potential for much longer sequences with much simpler controls (but with a loss of sound); and now *LCA*, which seems to combine the best features of the latter two programs.

In creating a show, you'll work with the Edit option on one of the pulldown menus. Here, on a kind of graph paper, frames are stacked one on top of the other with characteristics of each frame being read horizontally. The information in this script is a digest of information you entered on the "Frame Specs" screen, and makes a very handy quick-reference.

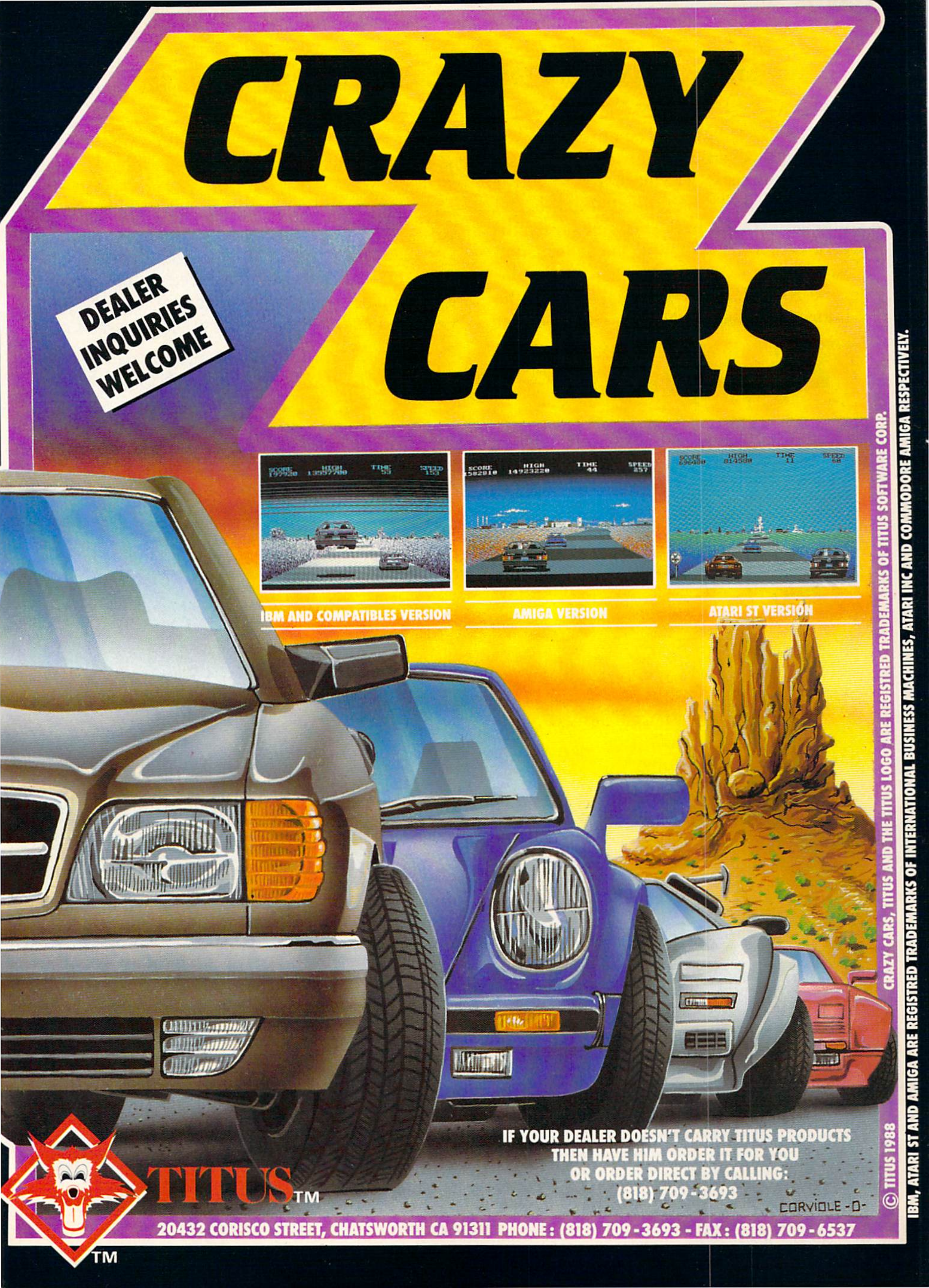
Frame Specs is yet another chart, with clear labels for each of the many options to be entered. On this screen, you'll tell the program what to do (Show Still); indicate the amount of time you wish the picture to be visible; assign the picture a frame number and a buffer; and enter the path/name of the picture.

At the bottom of this screen, you'll select from icons and buttons that control the transitions of the pictures, and in the process you'll become familiar with Hollywood terms such as dissolve, flip, fade, wipe, collapse—all of them relating to the way one picture on the screen will transit to yet another picture.

In the center of the Frame Specs screen are requestors for installing similar processes for sounds and music, and for animated sequences.

The program is really that simple to use, and perhaps its greatest contributions to the field—other than simplicity—are in the intelligent use of buffers and in the inclusion of a utility program called GrabAnim.

To take first things first, there are two ways to utilize a desktop video program: the first is to play it back on a computer, and the second is to transfer the finished show to video tape. In either case, proper timing of the final show is essential to success, and many otherwise fine creations can break down either while waiting for disk access to the next frame or in trying to make pictures and sound come out even.


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- **The Essential Amiga Entertainment Library**—buyer's guide to the 24 best games available
- **AmigaUserTerm**—an Amiga terminal program, ready to enter and run
- **Matrix Pattern**—a fill pattern editor with automatic data file creation, ready to enter and run

SECOND ISSUE—AUGUST 1988

- **Video Digitizers and Frame Grabbers**—the optical options available
- **Speech Set**—a voice synthesis program, ready to enter and run
- **Desktop Publishing: The Latest Editions**—a look at the newest DTP programs

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Before music can be played on the Amiga, you must first have an instrument, and the search for that followed by a search for the melody can make proper timing difficult at best. With the assigning of multiple buffers, both instruments and melody can be loaded into RAM where they will be instantly accessible.

The same is true of pictures and animation: put them into buffers where access is instantaneous and even a duffer should be able to have them appear on the screen when he wants them.

GrabAnim, a utility program used by Aegis in several previous offerings, makes it easy to create an animated file. The example given in the documentation holds that you could create a title with a program such as *Deluxe Paint II*, save it to a GrabAnim file, move the text slightly, and save it again. Repeating this sequence would result in a sequence in which the title becomes animated and moves about the screen. Well, all right. It's not Roger Rabbit, but it's still an easy way to create your own animations.

With easy to learn controls, with over 40 special transitional effects, and with multiple resolutions (including overscan to more closely emulate a broadcast TV image size), *Lights! Camera! Action!* should appeal to anyone involved in any kind of presentation graphics. With the use of buffers and GrabAnim, it should appeal to advanced users and those who have used the other DV programs mentioned earlier.

Who are these people, these potential users? Anyone who has ever tried to explain a complex subject to a group of people and who has found the job made easier by the use of pictures, graphs, or a "chalk-talk." These would include people who make business presentations; people who wish to insert dazzling titles or graphics into home video movies; anyone who needs to demonstrate a product or service; and those who want to learn what they need to know to someday surpass Roger Rabbit.

That sound and music can be incorporated and accurately timed is like frosting on the cake. People watching a slide presentation have an attention span of five seconds: leave a picture on the screen longer than that and boredom sets in and attention wanders. Sounds, music, and the transition special effects all allow you to capture a longer attention span so that whatever message you are conveying has a much better chance of taking hold.

With all this going for it, plus the ability to create "runtime" disks which can be played even by audiences who do not have a copy of *LCA*, *Lights! Camera! Action* should quickly find itself a place in a growing application field.

System requirements are 1mb or more of RAM and two disk drives. Optional use can be made of a hard disk, Genlock device, or video recorder. *LCA* is compatible with images and sounds stored in the IFF format.

Aegis Development Inc., 2210 Wilshire Blvd., Santa Monica, CA 90403 (phone: 213-392-9972). *—Ervin Bobo*

X-SPECS 3D
Haitex Resources, Inc.
Amiga
Price: $124.95

Man's desire to produce stereoscopic photographic images is over 100 years old. In the late nineteenth century the stereoscope, a hand-held dual lens device that displayed three dimensional photographs, was a popular parlor fixture throughout the United States and Europe. In the 1950s, a rash of grade B 3-D movies and comic books appeared, complete with cardboard red and green eyeglasses. More recently, motion picture technology introduced a technique employing polarized glasses, best represented by George Lucas' short film, "Captain EO," shown at the Kodak pavillion at Disney World.

One may think it only natural that the power of the computer should in some manner also support this visual delight, particularly the Amiga with its superior graphic capabilities. Just think of the possibilities—missiles flying out of the screen at you, CAD models floating in air! Haitex Resources, Inc. has taken the first step by developing and marketing its *X-Specs 3D* system for the Amiga. The system consists of two pieces of hardware supported by a software interface which controls the hardware. The essence of *X-Specs 3D* is, of course, the "glasses" the viewer must wear. The best description I can give is that they look a bit like a section Darth Vader's helmet—a black plastic wraparound visor which hangs from a headband. They operate on a principle unlike previous 3-D technology, and plug into a small black interface box which is itself plugged into joystick port 2 and supports two pairs of the glasses.

A three dimensional image is distinguishable from others by the presence of depth. In humans (as well as in animals), the brain processes images viewed by both eyes (which perceive the same view from a slightly different angle) into a sensation of depth. If we didn't have two eyes, we couldn't experience depth and would be at a distinct disadvantage, which is presumably the real reason Odysseus was able to defeat the one-eyed Cyclops! The object of stereoscopic imagery is to create a three dimensional sensation using two dimensional tools (such as photographs, movie screen, or—you guessed it—computer monitors). This has traditionally been accomplished by taking two photographs of the same scene, one offset from the other as if seen through each eye, and then displaying these images side by side or adjacent to each other. The red/green and polarized glasses make the left picture visible by only the left eye and the right picture visible by only the right eye, thus creating a sensation of depth.

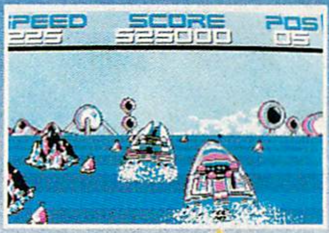
X-Specs 3D operates in a different manner. While the system still requires a separate picture for each eye, they are in a purely technical manner displayed sequentially and not simultaneously. In fact, each of the two views are alternately displayed 30 times every second, and without the glasses, the picture on the monitor vibrates quite noticeably. The glasses, however, contain two sections of liquid crystal film (one over each eye), much like the display on a digital watch. When a small electric current is applied to the film, it turns black and blocks the view. Thus, when the left eye picture is being displayed, a signal is sent out through the joyport to the glasses which causes the film over the right eye to darken (so only the left eye sees the view). The opposite occurs when the right eye picture is displayed. And because this process occurs so fast (60 times per second), you don't notice this rapid change and your brain actually combines the separate views into one three dimension-

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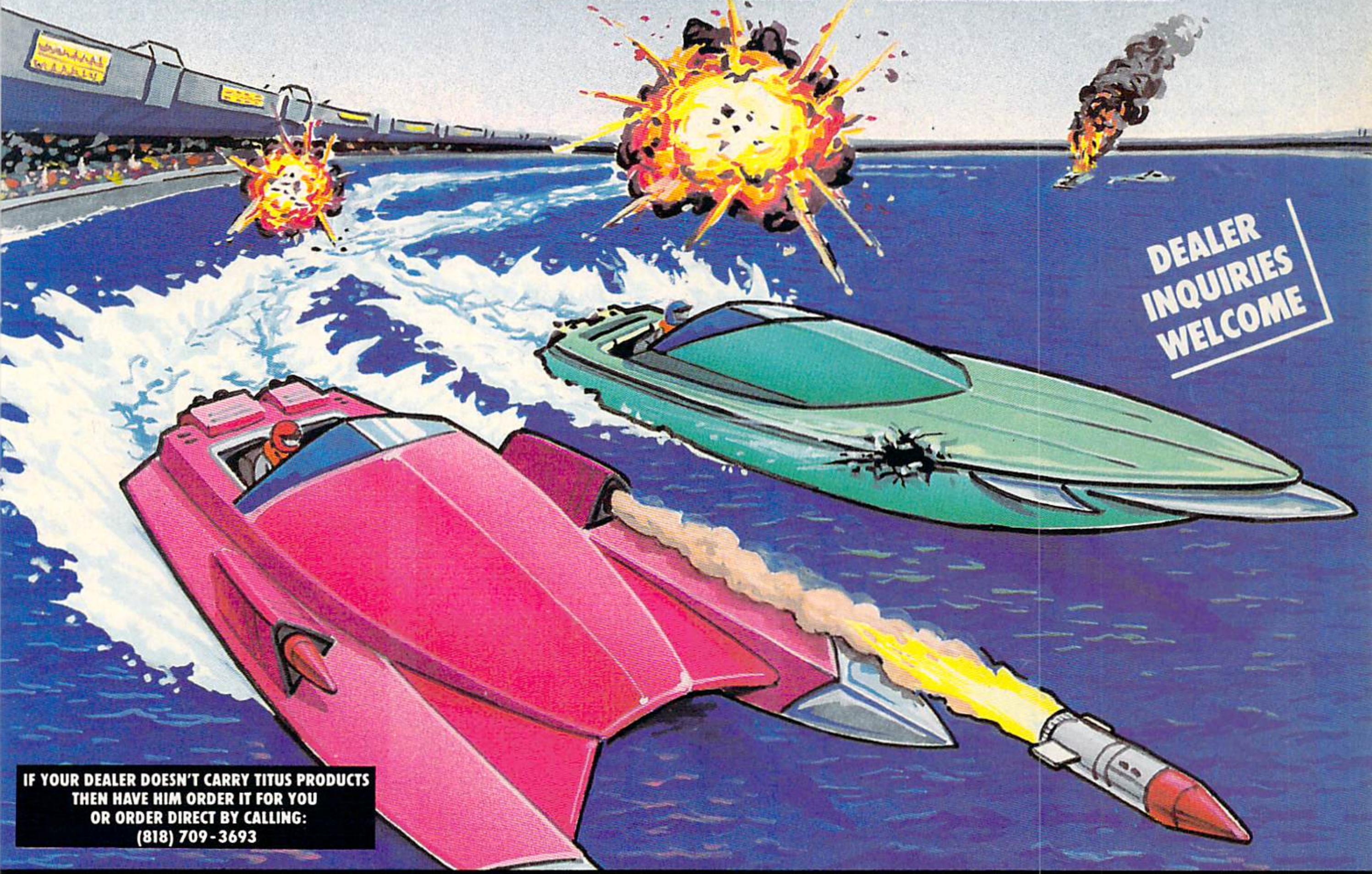
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X-Specs 3D operates in a different manner from previous 3D systems. Two separate computer images are displayed sequentially, each 30× a second. The glasses alternately darken the image seen by the left and right eyes, creating the 3D effect.

al image.

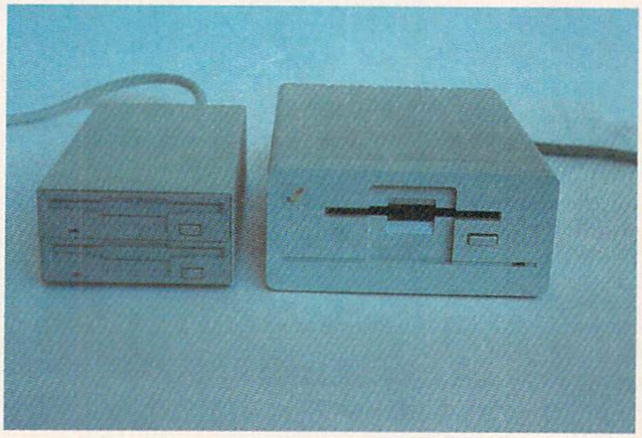
After all this background, you're probably asking the question, "But do they work?" Without a doubt, they do work. The diskette that Haitex supplies contains a number of demos, as well as a relatively simple 3-D arcade game. One demo is merely a picture of a cat with its head looming out of the monitor. Another is a display model of a molecule floating in space which for educational purposes is clearly superior to a two dimensional view. *CUBES3D* is a line animation where two rotating cubes alternately move from the back to the front of the screen (or, more correctly, out of the screen).

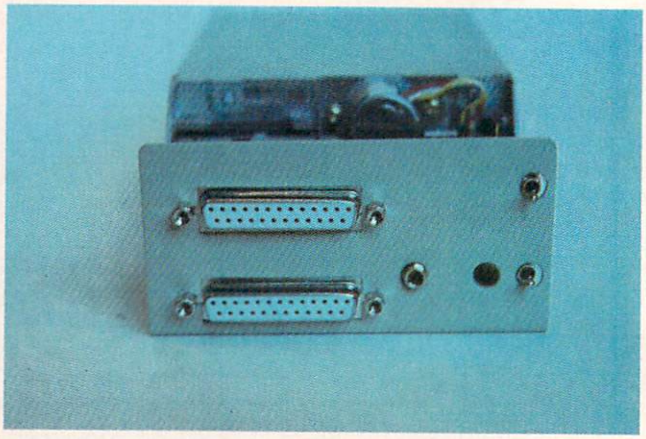
Probably the most impressive demo is *Space Spuds*, a shoot-em-up space arcade game. Despite its simplicity, it clearly demonstrates the potential of three dimensional entertainment software. As the pilot of a spaceship, you must whiz through space and blast away the debris left by the destruction of an intergalactic junk food freighter. The added dimension of depth is apparent and adds a unique and realistic feel to the game. Yet *Space Spuds* must only be considered a modest appetizer to a feast which is yet to be served (or perhaps even yet to be conceived).

The "manual" takes all of two sides of a sheet of paper, but does contain instructions on how to create your own 3-D images using a digitizer or a sculpture program. If the left and right images are stored as two standard IFF files, then a short utility program contained on the program diskette will display them properly while controlling the glasses. Haitex is even in the process of registering a separate ILBM form with Commodore (a single file containing the left and right eye images) just for 3-D images.

Now that we know that *X-Specs 3D* works, we must examine both its practicality and utility, and recognize that as of the writing of this review, there are no commercial programs available which make use of the hardware. Naturally, *X-Specs 3D* are of little use with "bread and butter" computer applications such as word processing, databases, and spreadsheets. It would be expensive to use them in point of sale and video presentation systems, as all of the viewers would have to wear the glasses. There is no doubt that they would serve a very useful purpose in high end or specialized applications such as CAD design and medical modeling. In fact, they are already being used successfully in those areas. According to Haitex, doctors at UCLA Medical Labs are using them for magnetic resonance brain scan imaging, and several institutions are using them for molecular modeling.

For the mass market, however, the obvious place of *X-Specs 3D* is in the entertainment arena, where already imaginative Amiga programmers can add





Left: Twindrive next to the Amiga 1010 disk drive. The former's super slimline packaging allows the user to conserve desktop space. Right: Twindrive's rear panel, showing pass-thru connectors and drive enable/disable toggle switches.

that third dimension to their programs. I can only presume, however, that programming a game in 3-D would require much more effort than normal, and may render it unplayable by those without *X-Specs 3D.* I'm certain that every reader can think of numerous games and simulations he or she would love to see in three dimensions, but the future of the product really depends on the number of independent software developers who are willing to devote both the time and money to programming and marketing such programs. I would also assume, or hope, that with increased software and corresponding increased sales of *X-Specs 3D*, the price could be reduced to a level which would be accepted by the mass market. I, however, cannot judge the future of the product, as that is a matter for the jury—and the jury is still out. I would, however, certainly think a prudent consumer would wait to purchase *X-Specs 3D* until such time as there were a decent choice of programs available that made use of the hardware.

Haitex Resoures, 208 Carrollton Park—Suite 1207, Carrollton, TX 75006 (phone: 214-241-8030).

—*Steve King*

Circle #220 on Reader Service Card

UNIDRIVE/TWINDRIVE
Memory and Storage Technology Inc.
Amiga 500/1000/2000
Prices: Unidrive $169
Twindrive $299

(Editor's note: Yes, the disk drives reviewed here *are* the same ones announced on page 8 of this month's *Scuttlebutt.* As sometimes happens, our evaluation unit arrived immediately after the press release for the product had been incorporated into our news section, making it possible to include the review in the same issue.)

Buying a peripheral for the Amiga used to be like selecting a long distance telephone company before the breakup of AT&T: the Amiga owner was forced to buy the Commodore-manufactured peripheral. Which is not to say that Commodore's peripheral was likely to be of less than high quality, but simply that the consumer had no freedom of choice. It seems that it has become a tradition for the third party developers and manufacturers to take a "wait and see" stand when Commodore introduces a new computer. In some cases this policy has proven to be a wise one.

Now that it's been over three years since the introduction of the Amiga, we are witnessing a deluge of third party manufactured peripherals. This, of course, is a sign that the Amiga market is alive and well. The user now has the opportunity to select not only the best-priced products, but also those of the best quality. The Unidrive and Twindrive 3½" external floppy disk drives from M.A.S.T. Inc. are such products.

The unit we received for evaluation was Twindrive, the dual version. Upon opening the box, we were surprised to see that the Twindrive was smaller in size than the Amiga 1010 disk drive. Could the technology have changed that much in three years? Granted, a certain amount of progress has been made in the miniaturization of computer parts, but the significant decrease in size is mostly the result of a carefully developed drive layout. If you were to open up your Amiga 1010 drive, you would find enough room inside the outer case to fit one other, possibly even two other drive units. I guess Commodore wanted us to think that we were getting a lot for our money.

The Twindrive, which the manufacturer claims to be the slimmest drive unit available as of this writing, measured in at 2 1/8" high X 4 1/16" wide X 8 1/16" long. The single drive version measures one inch less in height, with the other dimensions the same.

Externally the drive units are enclosed by a beige colored, durable steel case. Located at the rear of the drive are two 25 pin female D-type connectors, two drive enable/disable toggle switches, and one external power connector. Unlike the Amiga 1010 or 1020 disk drives, the Twindrive's connecting cable is not permanently attached to the disk drive, making it more convenient to store during transportation.

Examining the D-type connectors on the back of the drives reveals that they are not the standard 23 pin Amiga connectors. Besides the difference in the number of pins, they are also slightly larger. This posed a problem when attempting to arrange our drives. The Twindrive must be the last drive connected if you are daisy chaining several drives. The documentation explains that you must use a suitable connector if you are going to arrange your drives in any other fashion.

The two toggle switches located next to the D-type connectors allow the user to enable and disable a selected drive. A warm reboot is needed after one of these switches is toggled on.

As tested by itself with the A500 and the A1000, we did not need to make use of an external power supply. However, if you are using any other external drive such as the Amiga 1010 drive with the Twindrive, an external power supply is required. If you own an Amiga 2000, the power supply from the computer should be able to handle the extra load. Otherwise a 9 volt power supply is available from the manufacturer at an additional cost. The Twindrive consumes only 6mA of power when in standby mode, resulting in a much cooler running system than usual. This is an added blessing when you don't need any more heat radiating from your computer.

Located on the bottom of the Twindrive are four screws. Removing these screws allows the metal cover to slide off, revealing the drive mechanisms. The drive units themselves are manufactured by Fujitsu. The units could hardly be heard while they were accessing the disk, as opposed to the grinding noise that we have all grown accustomed to. Another nice feature is the hinged dust flap that closes automatically when the disk is ejected from the drive, preventing any sort of dust or debris from entering the drive.

Both the drive mechanisms are connected to two boards at the rear of the metal chassis. It is on these boards that you will find two jumper blocks. The first set of jumpers are used to set the drive so that it can be used with an external power supply. The second set is to enable or disable the drive clicking that you hear when there is no disk in the drive. The Twindrive will automatically detect if a diskette has been inserted or removed.

We tested the drives with various commercial software programs and had no difficulty with any of them. All loaded and executed as expected. For those users who purchase the Unidrive and later wish to upgrade to a Twindrive, M.A.S.T. Inc. does have a guaranteed upgrade policy. The drives come

with a 12 month limited warranty.

Memory and Storage Technology, Inc., 7631 East Greenway Road, Scottsdale, AZ 85260 (phone: 602-483-6359). *—Michael R. Davila*

Circle #229 on Reader Service Card

DELUXEHELP
for Photon Paint, DigiPaint, Calligrapher, and Deluxe Paint II (Prices and memory requirements vary; see below)

We can safely state that computer drawing and painting really began with *MacPaint* for the MacIntosh. Prior to that time, good computer graphics were created by low-level programming while so-so graphics were created by more limited joystick painting programs for the Apple and the C-64.

Although *MacPaint* is primitive by today's Amiga standards, it introduced to computerists the ability to move a mouse and make a line appear on the screen—and to select an eraser and remove part of the line. By the same token, precise circles, squares, and rectangles could be created and enhanced with text in a variety of fonts and sizes.

So far, so good. Most computer users are capable of distinguishing a circle from a square, and some are even able to spell a word the same way twice. But with the advent of painting programs for the Amiga, the disciplines of Art and Computering blended and some of us were thrown for a loss: after spending a great deal of time learning to work with computers, we were suddenly expected to understand things such as dithering, shearing, brushes, transparent colors, and more.

Some of us kept drawing circles and squares and adding occasional text. We were doing it in color and thought all was right with the world, but the truth is we were using only portions of some very powerful painting programs.

Enter *DeluxeHelp*. Developed by RGB and published by Apache, *DeluxeHelp* is currently available in editions for *DeluxePaint II, Photon Paint, DigiPaint*, and *Calligrapher*. Using the multitasking abilities of the Amiga, each of these programs is designed to run resident with a painting program and to provide you with animated, easy-to-understand lessons on all the features of that particular program.

Typical of the series is *DeluxeHelp* for *DeluxePaint II. DeluxeHelp* goes in drive DF0: and *Paint* goes in drive DF1:. As *Help* loads, it also loads the painting program and starts it running in the background. (With the edition of *Photon Paint, Help* is running in the background.)

From pulldown menus, select the feature you wish to understand better and the colorful *Help* screen is replaced by the screen of your painting program.

The standard Amiga voice gives you audible instructions as the mouse pointer begins to move, but these instructions are usually limited to such things as "LMB" (left mouse button) and "Release" (the button). No matter. If you've used the paint program at all, you already understand that part of it.

The real show is visual as your cursor moves to select tools and colors and then implements them on the screen. If you've selected "Shear" from the "Brush" menu, the program will create a brush, shear it, and then show you what a sheared brush is used for. You really can't ask for more than that.

You may get more, however.

In my work, I'm frequently asked to evaluate such programs, sometimes on short notice. Although I will try every feature in a program before commenting on it, *DeluxeHelp* has shown me new uses for some features I had thought to be of only marginal value. In this respect, the animated sequences may go beyond tutoring and slip into the area of inspiration.

Lessons given do not seem to be truncated in any way. One of my favorite features of *Photon Paint* is the manipulation of brushes, particularly the "Wrap-On" feature. In selecting this tutorial from *DeluxeHelp* for *Photon Paint*, I was shown every shape on which a brush can be wrapped, even though this required *DeluxeHelp* to create several different brushes to better illustrate the effects of various wrap-ons.

Brushes were wrapped onto two shapes, then the screen would clear and another brush would be created and wrapped on to two different shapes. In this way, the program managed to keep the screen uncluttered and showed off the feature to best advantage. Since many tutorial programs seem to have shortcuts built in, it was a pleasure to find one that seemed determine to cover everything and answer every question. In other instances, such as the tutorial on using transparent background color, you are first shown the effect you'll get without using that feature and then the effect you'll have if you use it.

The *DeluxeHelp* series can be used in two ways, as a straight tutorial or as online help. In the former, it is possible to go through every lesson one after the other and perhaps learn the potential of the painting program under question. (Since this will take some

time, we do not suggest doing this in order to choose which paint program to purchase—unless you are on very good terms with the software store manager and have brought a lunch.)

As online help, *DeluxeHelp* will run in the background while you're creating your masterpiece. When you become stuck or need to be refreshed on how to use a particular feature, you swap screens by pressing Left-Amiga-N, select the tutorial, and, when it is finished, return to the painting program by pressing the same two keys.

Documentation is slight, as befits a program that puts almost all its instructions into your computer and on your monitor screen. To use it, you need only note that the paint program must be placed in drive DF1: and not DF0: as you're accustomed to doing. Once you've mastered that, you'll only have to remember how to make a menu selection with a mouse.

One megabyte of memory and two disk drives are required for running *DeluxeHelp* for *Photon Paint*, for *DigiPaint*, and for *Calligrapher. DeluxeHelp* for *Deluxe Paint II* requires only 512K RAM but still needs two disk drives. Help for *Calligrapher* carries a suggested list price of $44.95, while the others all list at $34.95. (Ed. note: not included in this review was the new *DeluxeHelp* for *PageSetter*—list price $34.95.)

RGB Video Creations, 3944 Florida Blvd., Suite 102, Palm Beach Gardens, FL 33410 (phone: 407-622-0138).

—Ervin Bobo

Circle #228 on Reader Service Card

FINEPRINT
Designlab
Amiga with 512K
Disk; $49.95

Rushing out to buy a program for your Amiga that allows you to print in black and white may not seem entirely logical, and would probably make you feel as though you'd fallen into a time warp and got off at the wrong stop. Color printers are increasing in number and decreasing in price, and they'll handle all the beautifully colored programs like *Express Paint, Photon Paint,* and so on. So why retreat to a disappearing art form?

Well, for one thing, *Fineprint* gives you something more constructive to do with old printer ribbons than pulling them out of the cartridge and using them to tie up your little brother. And by the time we get to that information, you just may realize that *Fineprint* is a very complex program with some real user benefits.

Although *Fineprint* can be copied to a Workbench disk, the default form is to boot Workbench and then open *Fineprint*, keeping WB in the drive until the program is fully loaded. (Otherwise, your computer won't be able to find its own parallel port—but we've all had days like that.)

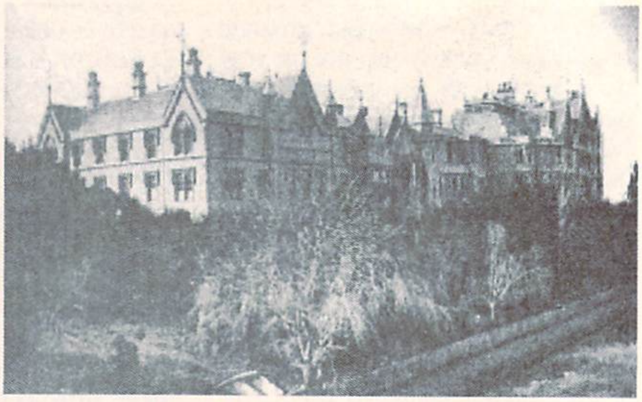
On your first use, you'll have to use Fineprefs, a program considerably different from the Preferences you've been using. Fineprefs allows you to select from a long list of printers and also to choose the graphic dot density for that printer. Our advice is that you begin with the default dot setting.

Fineprint is so finely tuned that you'll have to use some care in selecting equivalent printers, should yours not be included on the list. In my own case, I felt my Panasonic 1092 should perform like the Panasonic 1091. Not so. After several frustrating attempts, I decided to call it an Epson MX-80 and everything worked fine.

Now open the *Fineprint* program. At

Circle #227 on Reader Service Card





Printouts with Deluxe Paint *(left) and* Fineprint, *using the same printer, IFF file, and density printer driver.*

the top of the screen are 32 sliding bars to control the palette. Since we are dealing with black and white, you may wonder why so many. Lo-res IFF pictures generally use a 32-color palette, and in a picture containing red and black and dark blue the three colors will all appear as black when translated to a gray scale. The dedicated slider bars mean you can deal with the three blacks individually.

From a pull-down menu, you can elect to work with three palettes. When a picture is loaded, it defaults to palette 1. Keep it intact and do your experimenting on palette 2 or 3, without risking the original settings.

Below this are requestor boxes in which you can set the size of your finished print by specifying the number of dots horizontally and vertically. In using this, it helps that one of the items on a pulldown menu—called Printer Prefs—reminds you of the number of dots per line on eight inch paper. Unless you increase or decrease both dimensions, you'll find yourself with a distorted printout, but even this may at times be used creatively.

Now load a picture. Unlike many paint programs, *Fineprint* is forgiving in this area and will load IFF pictures with suffixes such as .Win, .Pic, and even those with the v. prefix given by *Aegis Images*. (It will not, however, handle HAM pictures, which usually have more than 32 colors.)

The picture appears at the lower left corner of the screen, along with information as to its horizontal and vertical resolution. Though the picture is small, detail seems to come through. Changing slider bars on the palette has an immediate effect on the picture, but that effect is still not quite a WYSIWYG. My experience shows that the monitor displays lighter than the printer image. It might be possible to adjust your monitor brightness to bring the electronic and printed images closer together, but I think it's hardly worth the trouble.

Anyway, we'll assume you've loaded the picture and manipulated the gray shades, and are ready to print. Before you do, go to the Ribbon menu and let *Fineprint* know whether your printer ribbon is New, Medium, or Old. It will have a great bearing on how your picture is printed. And for a change, older ribbons are better.

Remember that in graphics printing, the quality depends on dot density: the closer dots are together, the denser the line printed. Many print routines, including the gray scale of *Deluxe Paint*, creates shades of gray by varying the spacing of black lines: the farther apart the lines, the lighter the "shade" of gray—and the final print has many of the qualities of the woodcut once used in printing presses.

Fineprint draws a picture by varying the dot density and by making multiple strikes in the same area, with line spacing not being a factor. With a new ribbon, three strikes would result in dense black, while an old ribbon would create a shade of gray. An older ribbon gives the program a greater range of strikes to produce, creating a broader gray scale, and the result is much closer to the half-tones used on modern printing presses.

(Note, however, that since this scale is created on a line-by-line basis, the stairstep effect of curved and diagonal lines is not affected.)

It would be great if such printed pictures could be incorporated into desktop publishing, but they probably can't. Though *Fineprint* does allow for precision "centering"—placement of picture on the page—as well as precision sizing, the exact alignment necessary for rolling back your publishing paper in order to insert a *Fineprint* picture in a blank space is probably not worth trying. (We only mention it in the hope that someone will try.)

Although *Fineprint* was designed for images that will fit on a single sheet of paper, there is said to be almost no limit to the size you can choose. While the manual says prints of 100 feet high can be achieved, it also says a 10 foot high image may take up to a week to print. Deadlines and the price of printer ribbons being what they are, I verified neither claim.

Large prints are created on several sheets of paper, which must then be taped together to form a whole. The changing quality of such a print—as your ribbon deteriorates from new to old—is not addressed, but is probably worth at least a passing thought.

Documentation for *Fineprint* is both good and brief. Some experimentation will be required to get the most out of the program, and since the experiments will require printing, you can use this time to create old ribbons out of new ones.

In the meantime, start saving the ribbons you'd normally use to tie up your little brother. You may have to teach him some other diversions—Fall On The Cat is a good game—but putting those old ribbons to a more creative use may be worth all your trouble.

Designlab, P.O. Box 419, Owego, NY 13827 (phone: 607-687-5740).

—Ervin Bobo

Circle #234 on Reader Service Card

FLOTSAM

Send your comments on any aspect of Amiga computing to *Flotsam,* c/o *Ahoy!'s AmigaUser,* Ion International Inc., 45 W. 34th St.—Suite 500, New York, NY 10001. Only letters that are typed and double spaced will be considered for inclusion.

I read with interest your review of my program, *IntroCAD,* and was favorably impressed by your candor, even-handedness, and selection of topics. I have two comments:

Your review states that *IntroCAD's* plotter output cannot be directed to a file, but must go straight to the plotter. This is not true. Plotter output (and printer output, for that matter) can be directed to a file very easily from within *IntroCAD* by clicking on a gadget and typing a file name.

On another point, your criticism of *IntroCAD's* exclusive use of the interlaced, high-resolution graphics mode is well-deserved. I've heard enough: *IntroCAD* will allow selection of a non-interlaced mode in its next release.

—Tim Mooney
Rockville, MD

I am writing concerning a recent product review by Cleveland Blakemore in *Ahoy!'s AmigaUser* concerning our product *Alien Fires—2199 A.D.* Mr. Blakemore's review is filled with unfounded opinions, presumptions, and outright lies that were never verified with anyone at Paragon Software. Mr. Blakemore's ignorance of the product is clearly visible when he presumes that the program was written in Amiga Basic when in actuality it was written in C. Blakemore continues by stating that he suspects *Alien Fires* might be a "compiled game." No kidding, Cleveland! Most programming code is compiled, regardless of what language it is written in.

These presumptions are tame in comparison to the blatant lies printed by Blakemore. Blakemore says that the characters are well-drawn but lack animation, which is untrue. Several of the characters are animated. He also states that at the end of the game a player must "sit quietly while the voice synthesizer takes a minute or two to tell you that you are dead." The actual message is 10 seconds, a far cry from a minute or two.

A simple phone call to Paragon Software to verify the claims of the review could have prevented the factual errors. I wish to note that customer response to the product has been very positive and *Alien Fires* has received excellent reviews in other publications.

—F.J. Lennon
Vice President of Marketing
Paragon Software

We clocked the delay between the time the player dies and the time Alien Fires *informs him of that fact at 22 seconds—truly, "a far cry from a minute or two."*

We apologize for our reviewer's error. But the two other specific objections you voice stem from semantic misinterpretations.

In saying that the characters in Alien Fires *"lack animation," our reviewer did not mean that the characters were frozen motionless. He meant that they were lacking* in *animation—just as a shortstop who's said to "lack range"* can *move to his left or right to field a ball, just not as far as Ozzie Smith can.*

In saying that Alien Fires' *scrolling starfield was "reminiscent of Amiga BASIC," our writer's contention was not that the game was programmed in Amiga BASIC, but simply that the background referred to was so primitive, it looked like it had been.*

Our writer's overall negative view of the game was based on a number of factors you don't rebut: poor documentation, bugs, frequent lock-ups, limited parser, inadequate effects and graphics in the combat sequences, use of the same icon for all opponents, and more. Perhaps it was in the interest of brevity (we did ask you to keep your letter short when you phoned us) that you did not address yourself to these points—if so, we'd be glad to hear your thoughts, or those of any of our readers with an opinion either way. In any case, we thank you for taking the time and interest to write us, and hope other manufacturers will follow your lead.

Please find enclosed my subscription coupon for *Ahoy!'s AmigaUser.* I like your style. If you are open to new ideas,

Continued on page 74

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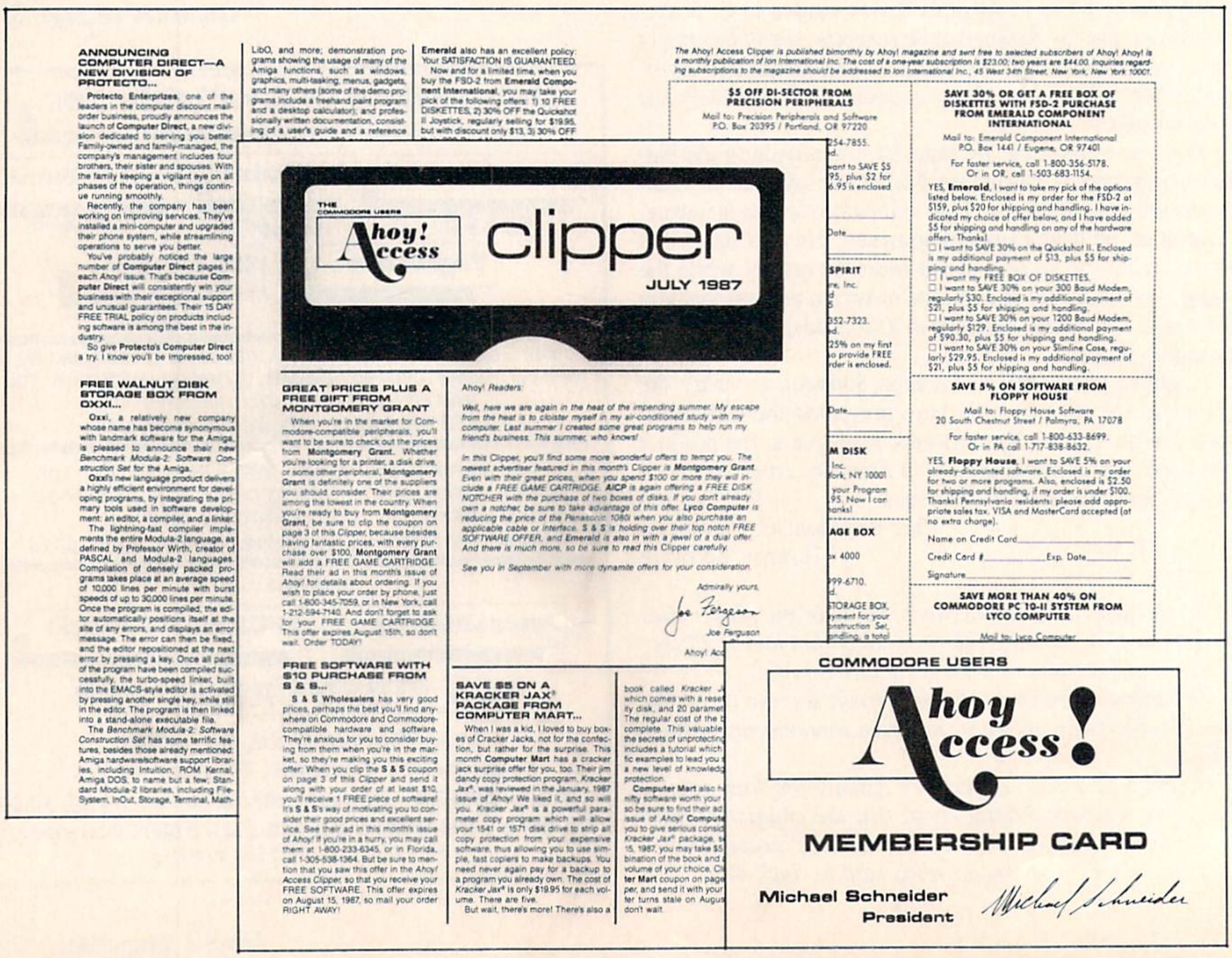
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AMIGA RS-232C STANDARD COMMUNICATION

By Paul Maioriello and George Sokolowsky

In the past, Commodore has not provided a standard serial interface for its popular personal computers. This has deprived users from interfacing to a wide variety of third party off-the-shelf serial peripherals such as modems or even other computers. This article discusses the safe and simple methods of constructing the proper cable to get your Amiga conversing with the outside world.

The Amiga, among its many acclaimed attributes, has been blessed with a standard RS-232C serial port. This allows the Amiga to communicate without the need of buying expensive non-standard interface adapters that perform voltage conversions. Some basic concepts and keywords should be mentioned before deciding what type of interface cable should be constructed. We will go into some detail, so please, do not be overwhelmed, shrug your shoulders, and give up! It is really a lot easier than it appears.

Most personal commputers with standard RS-232C serial ports are configured as a DTE (data terminal equipment) port. The most common modems, known as Hayes or Hayes compatible modems, are configured as DCE (data communications equipment). The interface cable for a DTE to DCE connection is simply a pin to pin direct wire cable. If the modem is DTE, such as a Microcom modem, or if perhaps you desire to interface with a hardwire link to another Amiga or IBM PC, the interface cable for the DTE to DTE connection is a data crossover cable commonly referred to as a null modem. Now we will slowly explain what all this means to you.

The difference between DTE and DCE is the arrangement of data pins 2 and 3 of the 25 pin D shaped connectors called DB25 connectors. Figure 1 shows the 9 pins of a DTE to DCE (Amiga to modem) interface cable. Notice pin 2 (TXD) of the Amiga side goes to pin 2 (TXD) of the modem side. This tells us the data being transmitted from the Amiga is going to be transmitted from the modem; therefore it must go to the transmit data pin on the modem. Similarly, pin 3 (RXD) of the Amiga is receiving the data being received by pin 3 (RXD) of the modem.

Another necessary pin to pin connection is pin 7 (GND) to pin 7 (GND), which is the common data ground reference level for the RXD and TXD pins on both sides. Figure 2 shows a minimal 3 wire diagram, which is all that is really needed to provide a DTE to DCE interface. The other six pin to pin connections in Figure 1 are really only needed when there is elaborate software to take advantage of these special signals. What these signals do is beyond the scope of our discussion and may be addressed in the future. A good rule of thumb is to keep the interface simple: there is less to go wrong.

If the modem you select is not a Hayes or compatible modem, you should refer to the modem manual to find if the modem is a DCE or DTE type. If you can't find any mention of the type, a pin diagram flow will help provide the needed information. If pin 2 of the modem is labeled TXD with the source of the signal labeled as computer, terminal, or left blank, then the modem is a DCE type and will require the pin to pin direct method. If pin 2 of the modem is labeled TXD with the bit stream (source of data) labeled as being sent from the modem, then the null modem cable is the one you need.

A null modem cable reverses data pins 2 and 3 of the Amiga and modem. It stands to reason that the data being received by the Amiga on pin 3 must come from the data being transmitted back to the Amiga on pin 2 from the modem. Similarly, the data stream being transmitted on pin 2 from the Amiga must be collected on receive pin 3 of the modem. Figure 3 shows the crossing of data wires we have just discussed. For safety reasons it is very important that pin 1 goes to pin 1 and pin 7 goes to pin 7. Pin 1 is the frame ground and pin 7 is the reference data ground. Note that these are two distinctly different ground signals, although they both bear the same GND label; therefore, they should not be connected to each other.

Another more elaborate null modem scheme can be seen in Figure 4. This diagram is another alternative which will take advantage of additional signals, providing the modem has CTS and DSR capability and the software is intelligent enough to handle the signals. This null modem cable can also be used to connect the Amiga to another Amiga or another computer which has an RS232C serial port.

Once you've determined the type of cable you need, you'll need the correct DB25 plugs, even lengths of wire (color coded up to 50' is the best), rosin base solder, and a low wattage (15-35w) soldering iron. You will need one connector to plug into the Amiga. If you own the Amiga 1000 you will need a male DB25 connector. Amiga 500/2000 owners must purchase a female DB25 connector. If the modem has a male connector you'll need a female connector to complete the cable on the modem side, or if the mo-

dem has a female port, you will need a male connector.

The DB25 connectors can be obtained at local electronics stores such as Radio Shack, or at electronic or computer flea markets. Take care when soldering the wires to the pin connectors. Be sure there are no split strands of wire touching other pins and no solder runovers which could cause short circuits. If you are not sure of what to do, contact a friend in a users group or visit a local TV technician for assistance. Incorrect wiring could possibly cause damage to the Amiga, modem, or both, voiding any warranties. Remember, the only dumb question is the one you don't ask!

Both the Amiga and the equipment you wish to communicate with should be switched off when the cable is connected. You should then load your communications package (such as *AmigaUserTerm* from the May issue of *Ahoy!'s AmigaUser)* and follow the instructions for communications.

If you are using *AmigaUserTerm* and are sure it was typed in correctly, and have checked the baud rate, data bits, and cable connections, and the modem still refuses to respond to the Amiga, it's possible you have the wrong type interface cable. The modem may be a DTE type and need a null modem type cable instead of a pin to pin direct, or it may be a DCE and need a pin to pin direct instead of a null modem. Construct the other cable by reversing pins 2 and 3 on one side only, and attempt to run your communications package again. □

FIGURE 1: PIN TO PIN DIRECT

	DTE (Amiga)		DCE (modem)	
Frame Ground	GND 1	—	1 GND	Frame Ground
Transmit Data	TXD 2	—	2 TXD	Transmit Data
Receive Data	RXD 3	—	3 RXD	Receive Data
Clear to Send	CTS 5	—	5 CTS	Clear to Send
Data Set Ready	DSR 6	—	6 DSR	Data Set Ready
Signal Ground	GND 7	—	7 GND	Signal Ground
Data Carrier Detect	DCD 8	—	8 DCD	Data Carrier Detect
Secondary Detect	SD 12	—	12 SI	High Speed Indicator
Ring Indicator	RI 22	—	22 RI	Ring Indicator

FIGURE 2: SIMPLE PIN TO PIN DIRECT

	DTE (Amiga)		DCE (modem)	
Transmit Data	TXD 2	—	2 TXD	Transmit Data
Receive Data	RXD 3	—	3 RXD	Receive Data
Signal Ground	GND 7	—	7 GND	Signal Ground

FIGURE 3: SIMPLE NULL MODEM

NOTE: Keep Pins 1 and 7 separate!!

	DTE (Amiga)		DTE (modem or computer)	
Frame Ground	GND 1	—	1 GND	Frame Ground
Transmit Data	TXD 2	—	3 RXD	Receive Data
Receive Data	RXD 3	—	2 TXD	Transmit Data
Signal Ground	GND 7	—	7 GND	Signal Ground

FIGURE 4: FULL NULL MODEM

	DTE (Amiga)		DTE (modem or computer)	
Frame Ground	GND 1	—	1 GND	Frame Ground
Transmit Data	TXD 2	—	3 RXD	Receive Data
Receive Data	RXD 3	—	2 TXD	Transmit Data
Request to Send	RTS 4	—	5 CTS	Clear to Send
Signal Ground	GND 7	—	7 GND	Signal Ground
Data Terminal Ready	DTR 20	—	6 DSR	Data Set Ready

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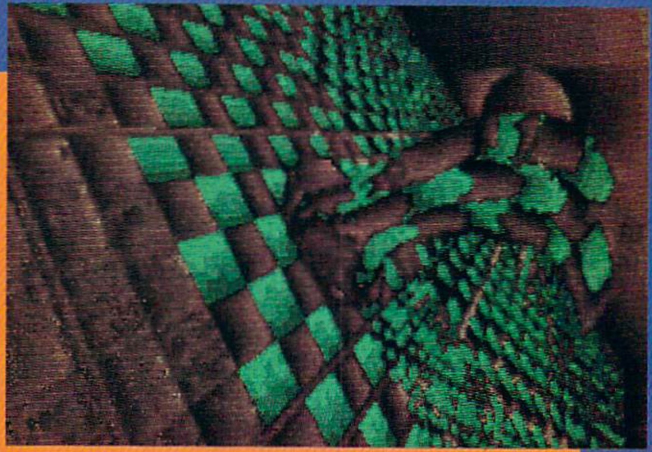

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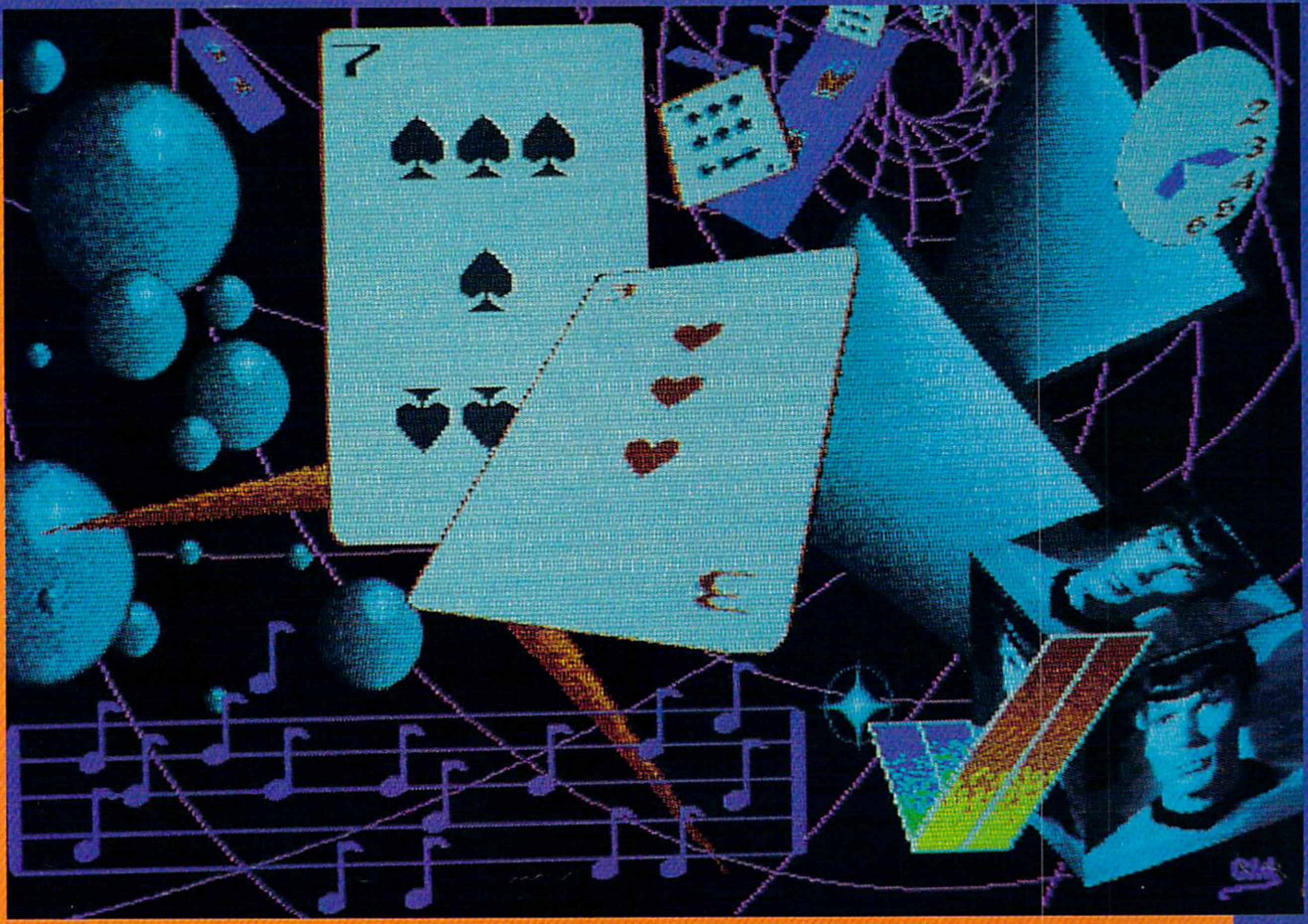


The *Art Gallery* offers the opportunity for fame and fortune to aspiring Commodore artists. Send your work on disk to *Art Gallery,* Ion International Inc., 45 West 34th Street–Suite 500, New York, NY 10001. Label each disk with the date of your submission, your name and address, the number of images on the disk, and the graphics or paint program used. Graphics produced on the Amiga are eligible for inclusion in *Ahoy!'s AmigaUser;* C-64, C-128, and Plus/4 images are eligible for inclusion in *Ahoy!* If your image is published, you will receive a free one-year subscription. Current subscribers will have their subscription extended by one year.

Note that the *Art Gallery* is not a contest. Published pictures are selected in an arbitrary and capricious fashion by the Art Director, based solely on their artistic merit.







On the facing page, top left: *Mantis* by Glenn S. Adkins (Palm Beach Gardens, FL). *Deluxe Paint's* brush select tool was used to place the wall units; the mantis is rendered freehand, with occasional use of the curved line mode for the outline. Middle left: *Checkerboard Sun* by Kiernan Holland (Roanoke, TX) on *Deluxe Paint*. Bottom left: *Mountain*, also by Glenn S. Adkins. Above: Gill Wichi (New York, NY) started with *Deluxe Paint II*, digitized Mr. Spock with *Perfect Vision*, and used *Photon Paint* to wrap him around a cube. Below left: *Socky Loid Asleep* by Alisa Lowden (State College, PA). Below right: *Zero Gravity*, in hi-res by Gary Dominguez (Oklahoma City, OK).





AND THE BYTE GOES ON....

Drum Machines for the Amiga

By Steve King



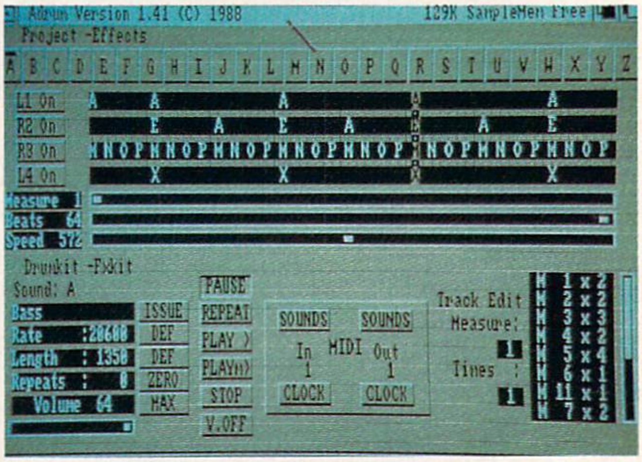
The easy to use **Drum Studio** *contains two sets of preselected percussion sounds and a set of ten volume meters.*

The Amiga is an incredibly powerful and versatile computer, and unlike most PC's has four built-in sound synthesizer circuits. These circuits are capable of reproducing quite acceptable stereo output. Anyone who has heard a musical score played on one of the many music programs, or sound effects in games, will agree. Moreover, the Amiga can record and store digitized sound samples in a standardized format called IFF which virtually all sound related programs can utilize. This opens up endless creative programming possibilities. One of these is using the Amiga as a programmable drum machine.

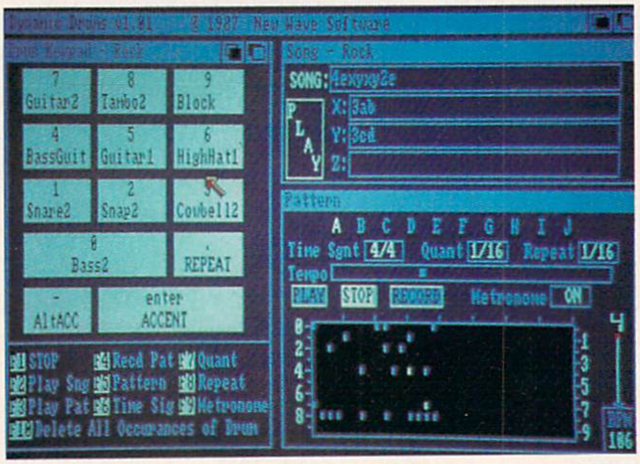
Simply speaking, a drum machine simulates a drummer in a band. The user sets the tempo and programs the machine to play specified percussion sounds at different times. The realism, of course, depends upon both the quality of the sound itself, and the ability of the user to create authentic sounding drum patterns. While there are a good number of dedicated drum machines on the market (costing upwards of several hundred dollars), they do have limitations. In many, the number of sounds is limited and fixed, and editing becomes tedious if not difficult. A computer, however, eliminates these drawbacks.

Three drum programs will be discussed, compared, and reviewed in this article: *Adrum* by Haitex Resources, Inc.; *The Drum Studio* by DigiTek; and *Dynamic Drums* by New Wave Software.

Initially, I should note that all three programs are similar in concept. They all utilize digitized percussion sound samples which are loaded from disk into memory, and they all play back those sounds in user-defined patterns which can be combined in any order to create a "drum score" for an entire song. One important note is that the term "drum sound" is used here quite liberally. It refers to any digitized sound sample, which could be a cough or laugh as well as a snare or bass drum. And the ability to use any sound as a drum opens up a myriad of creative options which cannot be equalled by most dedicated drum machines. One final point is that all three programs can use any digitized sound that is saved in IFF format.



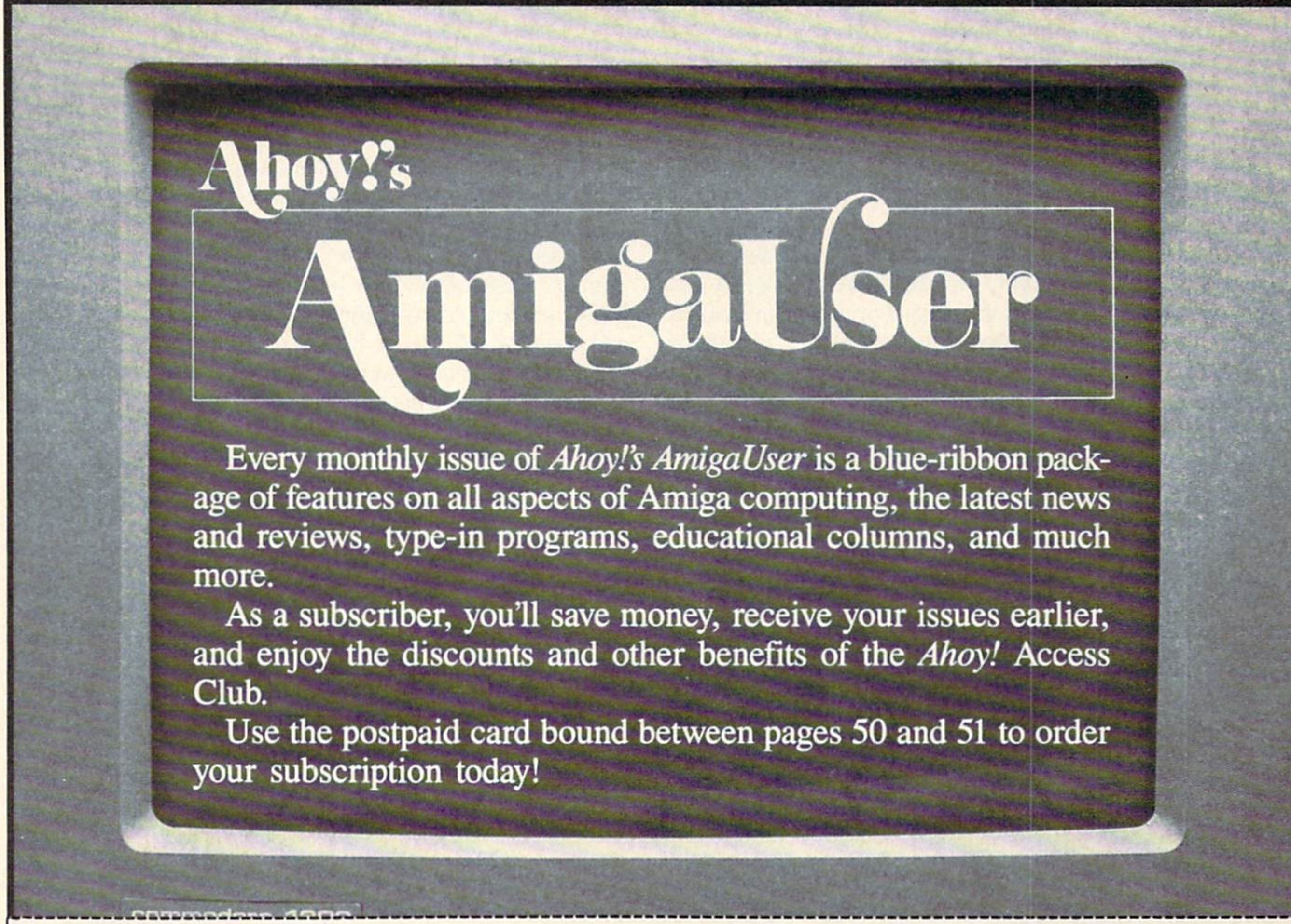
Adrum *supplies 26 sounds, represented by the letters A through Z. To hear a sound, press the corresponding key.*



Dynamic Drum *provides great flexibility in modifying individual sounds. Up to ten can be loaded in at one time.*

In testing the MIDI capability of these programs, I used a MIDI interface distributed by Datel, Inc. Housed in a sturdy plastic case, it plugs into the A2000/A500 serial port through a ribbon cable. What is impressive about this product is that it not only supports MIDI in and through, but has three separate MIDI out connectors which would permit

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the Amiga to drive several other MIDI-compatible devices simultaneously. Needless to say, it worked flawlessly.



ADRUM

Adrum is a well designed program making full use of the mouse and pulldown menus. The control panel which appears when the program is loaded is well-designed and easy to use. The standard drumkits (groups of individual drum sounds) supplied by Haitex contain 26 sounds represented by the letters A through Z, and these letters span the top of the control panel. To hear a particular sound, you simply press the key on the keyboard that corresponds to the letter. When you click on the box containing that letter, the sound becomes active and pertinent information about the sound (its name, sampling rate, volume, and length in bytes) is displayed at the bottom left of the panel. And all of these values can be modified to produce different sounds.

COMPARISON CHART

	Adrum	*Dynamic Drums*	*Drum Studio*
Price	$79.95	$79.95	$29.95
Copy Protected	No	No	No
Number of Sounds Included	27	101	20
Number of Drumkits Included	3	11	2
Maximum sounds in memory	26	10	20
Maximum patterns in memory	64	10	100
Maximum length of pattern	64 notes	64 notes	96 notes
Load/Save Individual patterns	No	Yes	Yes
Tempo range	60-1082	40-240	30-240
Sound modification	Yes	Yes	Yes
Loads other IFF sounds	Yes	Yes	No
Quantizing capability	No	Yes	No
Automatic repeat	No	Yes	No
MIDI capability	In and Out Notes/Clock	In and Out Notes/Clock	No
Recording modes	Mouse; real time with keyboard and MIDI devices	Mouse; real time with keyboard and MIDI devices	Real time with keyboard

For example, increasing the rate will raise the pitch, and decreasing the length will result in only a portion of the sound being played. Once a sound is modified, it can easily be saved to diskette as a different sound. For accenting effects, you can take the same sound (such as a bass drum) and save it with different volume levels. You can also replace sounds in a drumkit by clicking on the letter you want to use and loading in the new sound from disk (which will, of course, erase the original sound from memory). If you wish, you can create a different set of drums and then save the new drumkit to disk.

Drum patterns can be created in three different ways. But regardless of which method you use, there is a bit of initial housekeeping to do. First, you select the measure number you want to create or edit by using the slider control in the Measure Editor section of the panel. Next you must select the number of beats in that measure, up to a maximum of 64, and the tempo. Finally, you must decide which of the four available tracks you want to use, as two are assigned to the right stereo channel and two to the left. An important point to remember is that the physical hardware constraints of the Amiga permit only four sounds to be played at any one time, and this limitation applies to all the drum programs discussed in this article. To enter a drum sound using the mouse (Step-writing), you first click on the letter of the sound you want to use. Then simply move the mouse pointer to one of the four horizontal bars in the Measure Editor section corresponding to the track you have chosen, and click the left mouse button when the pointer is above the dot representing the beat number where you want the drum to begin playing. For example, if you have selected eight beats per measure and want the snare drum to play every other beat on track one, you first click on the letter for the snare. Then go to the Track One bar and click the mouse above the second, fourth, sixth, and eighth dot. When you do this, the letter representing the snare will actually appear in the bar above the dots so you can see which instrument you selected and when it will sound. Now, to hear what your composition sounds like, click on the "Playm>" button, and the measure will play once. If you also click on the "Repeat" button, the measure will play continuously until you click on the "Stop" button. As the drums play, a vertical bar sweeps over the four track bars to indicate exactly where you are in the measure.

If you wish (and have a great sense of rhythm and timing), you can also enter the drum sounds on the fly in real time. Just choose the Live-write mode from the menu, select the track, and click on the "Repeat" and "Playm>" buttons, and the program begins recording. Now every time you press a key corresponding to a particular sound, it will be recorded in the spot where the sweeping vertical bar is located when you press the key. Simultaneously, previously entered drum sounds will play. You can also enter notes with a MIDI-compatible musical keyboard by selecting the MIDI In option from the control panel. Before you attempt to Live-write, I suggest that you use the mouse to create a metronome track. Additionally, you may place different drum sounds on the same track, although as soon as one plays it will cut off the previous sound (if it is long and still playing).

But what happens if you make a mistake, or are a bit off in your timing? Editing is quite easy with *Adrum*. Using the Insert and Delete menu commands, you can shift sounds right or left. Click on the letters in the track bar with the right mouse button and the sound will disappear. You can even copy one measure to another.

Now that you have a perfect sounding measure, or a number of different measures, it's time to combine them into the proper sequence to create the drum track for an entire song. At the bottom right of the control panel is the Track Edit Panel where you sequentially enter the measure number you want played and the number of times it should play. For instance, if you want a song to play measure 1 four times, measure 3 eight times, and measure 2 sixteen times, the Track Edit Panel will look as follows:

```
1  x   4
3  x   8
2  x  16
END OF SEQ
```

Again, if you made a mistake, inserting and deleting measures is just a click of the mouse away. Finally, to play your entire sequence, click on the "Play" button and hear your masterpiece. If you're satisfied with it, you can now save it to disk for future use, drumkit and all.

One last feature worth mentioning is that *Adrum* has MIDI out capability. Simply speaking, you can use one of the four tracks (without sounds) to send timed pulses to another MIDI-compatible instrument, including another Amiga, to synchronize its tempo with *Adrum*.

A DRUM STUDIO

The Drum Studio is quite different from both *Adrum* and *Dynamic Drums*. It is a very simple program and quite easy to use. Although it is not nearly as powerful as the other two, it is also the lowest priced.

Drum Studio contains two sets of preselected percussion sounds. Set A is selected by pressing the CTRL key, and Set B by pressing the Left Shift key. The sounds themselves are played by pressing the individual function keys, and Digi-Tek has been thoughtful enough to provide a template to fit above the function keys that identifies the sounds.

The control panel is quite graphic. Its distinguishing feature is a set of ten volume meters—one for each of the instruments. As the sounds are played, the levels rise and fall, much like LED VU meters of audio equipment. *Drum Studio* uses the keyboard rather than the mouse to control all its functions, and this can be confusing at times.

There is only one way to record drum patterns—by pressing the function keys in real time to the beat of the built-in metronome. And the only way to correct any individual mistakes is to put the program into the Erase Mode and press the function key of the sound you want to erase at the precise moment it sounds (good luck). Holding down the appropriate function key throughout the entire measure will erase that particular sound completely. There is also a provision for copying one measure to another. *Drum Studio* also permits linking patterns to form songs, but to play a pattern sequentially more than once, you must enter its number again each time you want it played. Unfortunately, there is no way to edit the pattern sequence, so if you make a mistake you have to start from scratch. Moreover, the only way to know which drums are being played when is to listen after you have recorded them, as the program lacks a visual means of identification and placement.

There are two other modes in *Drum Studio* which are selected by pressing the "TAB" key: Tuning and Level. In the tuning mode, you can raise or lower the pitch of the drums by pressing certain keys on the keyboard. The ten keys "Q" through "P" and "A" through ";" increase and decrease the pitch of the ten active sounds respectively when they are pressed. The same method adjusts the volume level of each drum and is reflected in the level of the LED meter on the control panel. One other unique feature is that the power light on the Amiga actually flashes to the beat of the drums, acting as a visual metronome.

DYNAMIC DRUMS

Of all the drum programs, *Dynamic Drums* is perhaps the most sophisticated and powerful. The control panel is comprised of four separate windows, three of which are visible at the outset. The left half of the screen displays the Drum Keypad Window. *Dynamic Drums* only loads in ten sounds at a time, and these are represented by the number keys on the numeric keypad. The Drum Keypad Window graphically depicts the keypad with the name of the drum sound on the appropriate key. The Graphic Pattern Display takes up the bottom right quarter of the screen, and the Song Window is located at the top right quarter.

To record a pattern, simply click on the "Record" button in the Pattern window and a small graphic metronome begins to sound and swing back and forth. Additionally, the beat number is displayed above the metronome. There is a maximum number of eight beats per measure. The Graphic Pattern Display Window is set up as a matrix with the beat number (one through eight) across the top, and the instrument number (one through ten) from top to bottom. As you play back or record, a vertical white bar sweeps from left to right to indicate the beat number being played. As you record a particular drum, a small blue rectangle appears

For more information, contact:

MIDI Interface:
Datel Computers
3430 W. Tropicana Ave.
Unit #67
Las Vegas, NV 89121

Adrum:
Haitex Resources
208 Carrolton Park
Suite 1207
Carrolton, TX 75006

Dynamic Drums:
New Wave Software
P.O. Box 438
St. Clair Shores, MI 48080

Drum Studio:
DitiTek, Inc.
10415 N. Florida Ave.
Suite 410
Tampa, FL 33612

at the intersection of the beat and drum numbers. At the bottom of the window is a template showing what each of the function keys controls or activates. Drum sounds can be entered in three different ways: the keyboard, the mouse, and a MIDI-compatible instrument.

Entering the sounds through the keyboard is quite similar to the other programs. You press the key corresponding to the sound when you want it to play. One additional and quite important feature is the ability to quantize, or round off, notes to user-selectable values down to 1/32nd notes, often referred to as automatic error correction. Thus if you set Quantize to ¼, the program will place the sound you play on the nearest ¼ note beat, even if you were a little off on your timing. Another unique feature is the repeat function which is activated by pressing the "." key simultaneously with the number key. By setting the Repeat function to a particular value (i.e., eighth notes), the program will automatically place that sound precisely at eighth note intervals when you record a sound and also press the "." key. Both of these time-saving features are extraordinarily useful. One other sound-related function provides the ability to accent a drum beat in one of two different modes by pressing either the "Enter" or "–" key simultaneously with the sound key. When you do this, *Dynamic Drums* changes the tuning of the sound slightly, either upwards or downwards, to produce an accent effect.

To actually record a pattern, you first select one of the ten pattern banks labeled A through J by clicking on the appropriate box with the mouse. Then simply click on the "Record" button and you're off and drumming. As in *Adrum*, you also have the ability to enter notes using a MIDI-compatible device, such as a musical keyboard or drumpads. Finally, you can enter sounds by moving the mouse pointer to the spot on the display corresponding to the drum number and beat and click the left mouse button. Clicking on that same spot a second time will provide an accented sound, and a third time will delete it. To hear your pattern, just stop recording and click on the "Play" button. When you are satisfied with your pattern, click on another letter to begin the next one. Individual patterns can be saved to and loaded from disk.

Dynamic Drums provides enormous flexibility in modifying each individual sound. Hidden behind the Drum Keypad Window is the Drum Control Window. When brought to the front, it displays a myriad of sliders and switches in a vertical column for each of the ten sounds. The top row of sliders sets the volume for each sound, and the second row allows you to change the pitch. Beneath the sliders are two rows of switches. The first row lets you select on which of the four audio channels the sound will play, and is quite useful in preventing conflicts. If you find that one of your sounds is cancelling the other out (because they are playing on the same channel at the same time), simply change one of them to a different channel. The second row of switches turns the random function on and off. If you turn a sound's random function on, then every time you play an accented sound its tuning and volume will vary randomly, creating a distinctively less repetitive pattern. Beneath these switches are similar pitch, volume, and channel controls for the accented sounds. Finally, to the left of the window is a long slider which permits fine tuning of any of the levels.

Once you have created all your patterns, go to the Song Window (at the upper right of the screen) to combine them into a song. At the top of that window you will find a rectangular box to the right of the word SONG: which you click in to activate. Now, simply type in the order of the pattern in the form "number of times played" followed by the pattern letter. If you wanted your song to play pattern A three times followed by pattern B played twice, type in 3A2B. Now just click on the PLAY button to hear your composition. If you made a mistake, or merely want to change the order of the patterns, you can use the cursor keys with Back Space or DEL.

Another time saving feature is what New Wave calls "Subsongs." Beneath the Song Box are three other rectangles labeled X, Y, and Z. You can type linked patterns in these boxes and then refer to the X, Y, and Z Subsongs in the Song Box, using them much like subroutines in a computer program. For example, you can accomplish the same result as the song above by typing 3A2B in the X box, and simply typing the letter "X" in the Song Box. This is very useful when you have composed a song with standard verses and choruses.

Finally, *Dynamic Drums* can also use MIDI for clock synchronization as well as note input, and there is a menu item which turns on and off the built-in low pass filter on the Amiga 500 and 2000 computers. As icing on the cake, New Wave furnishes an audio cassette containing a short tutorial on programming patterns and songs.



SUMMARY

Of the three programs, *Drum Studio* is clearly aimed at the hobbyist and is very inexpensive. While it is far less versatile than the other two programs, it is also quite simple and easy to use. The more serious musician, however, will find it lacks certain vital features and should turn to either *Dynamic Drums* or *Adrum*. Of the two, *Dynamic Drums* offers the most features and has more sounds and sample patterns and songs than *Adrum*. *Adrum*, however, has the ability to store more patterns and songs in memory, and this could be an advantage for some users. The manuals for all three programs are quite short, but with programs of this nature, the best way to learn is by trial and error. To facilitate your comparison of the three programs, I have included a chart addressing the salient features of each.

No matter which program you do purchase (and all are reasonably priced), I think you will find all produce realistic drum sounds which can easily be transferred to tape for use as a drum track in musical compositions. Finally, these programs again show the power and versatility of the Amiga, and prove that it certainly marches to the beat of a different drummer. □

MS-DOS MEETS AMIDADOS

Part I: Putting It All Together

By Ted Salamon

This series of articles is going to explore the world of MS-DOS as it relates to the Amiga 2000, via the Bridgeboard. MS-DOS stands for MicroSoft Disk Operating System, the operating system driving the vast majority of IBM and IBM-compatible microcomputers. Commodore has licensed, and provides with the Bridgeboard, a special version of MS-DOS designed for the Amiga.

Such derivatives are commonplace. For example, PC-DOS is the official IBM version of MS-DOS. In many ways they are the same, though there are differences introduced by IBM to support special features in its hardware. Other companies, such as Compaq and Zenith, also license special versions for their hardware. In this instance, Commodore is right in tune with the mainstream players, and you get to reap the rewards.

Whether you already own a 2000 with a Bridgeboard, or are contemplating the investment, you'll benefit from these articles. Topics will range from installation and troubleshooting to alternate setups, benefits, and reviews of MS-DOS application software that has been tested in my office.

THE PLAYERS—A SHORT BIO

Commodore supplies MS-DOS 3.2 with the A2088, the official designation for the Bridgeboard. Most IBM and compatible owners have to pay for their DOS; the current list price is around $125.00!

3.2 is strictly a command line interface, à la CLI. There are no icons, windows, or graphic interfaces, just a greater than sign followed by the disk drive identifier and a blinking cursor.

Commodore also bundles GW-BASIC, a standard practice for most IBM compatibles. IBM machines have another version of BASIC built into ROM. The versions are nearly identical, so there are very few incompatibility issues; the majority of those are the result of programmers bending the rules.

A 300+ page manual does double duty as the *MS-DOS User's Guide and Reference.* A separate, smaller manual covers GW-BASIC, and the *Bridgeboard User's Manual* rounds out the paperwork.

The A2088 is a card which fits into an IBM PC slot and an Amiga slot simultaneously. The 2088 provides PC XT compatibility, processing power, and speed. An Intel 8088 processor is mounted on the board, heart of the compatibility.

But, the Bridgeboard is more than another CPU running on its own. Because it resides in both buses simultaneously, MS-DOS runs as a window under AmigaDOS, with the advanced ability to share files across operating systems! Amiga files can be written to MS-DOS disks and vice versa. The Amiga's multitasking comes into play, allowing one MS-DOS session and multiple Amiga sessions at the same time. Try that on an IBM running MS-DOS; you won't get very far.

The 2088 has room for an Intel math coprocessor, the 8087 model. This chip allows programs specifically written to address the chip to perform number crunching with added alacrity. Running at 4.77 megaHertz, outfitted with 512K of RAM, and sporting an IBM-compatible BIOS, the Bridgeboard is truly a computer on a board.

The kit also includes a 360K floppy disk drive (drive A in MS-DOS lingo) and cables to connect the drive to the 2088. (An optional MS-DOS hard drive can be installed in lieu of, or in addition to, an Amiga hard drive.)

Special software is provided to create the MS-DOS environment. Files such as Install, in all its iterations, are run once. Others, such as PC Mono or PC Color, and PC Disk are run to start or fully use the features of an MS-DOS session.

PC Mono specifies your monitor as monochrome (with a twist); PC Color tells the system it is color. LPT1 activates the Amiga parallel port as an MS-DOS printer port (LPT1 in MS-DOS terms), and PC Disk makes it possible to share files between the two operating systems.

The system in use for these articles currently comprises a 3 meg 2000 with df0, dh0 (20 Megs), a 2088, and the 360K floppy (A>) installed. Output is to a Commodore 1084 monitor and assorted Epson and IBM printers and a Hewlett-Packard 7550A 8-pen color plotter. The hard drive

does not autoboot; the "A" model controller card is on the way.

Besides the initial outlay for the 2000, there is a decent monetary commitment necessary to install a 2088. As it stands now, that commitment is around $1000. What does a grand get you?

THE BENEFITS

Some critics say they can get a clone for less than $1000. Perhaps; but can they share files and multitask, and do they have the room for another system? Can they afford another monitor, another workstation, etc.? There are conveniences that mere clones cannot provide.

Once the Bridgeboard is installed you can add any type of MS-DOS expansion board in the XT slots—hard cards (hard disks on a card), additional memory, enhanced video graphic cards, serial ports for telecommunications and special printers, network boards, etc. AmigaDOS and application programs can also access the MS-DOS hard drives if an Amiga partition is created.

Curiously enough, the PC mono software does the regular IBM world one better. Instead of green or amber text on a black background, you can pick four colors from the Amiga's 4096. PC Color, on the other hand, allows up to 16 colors for text and 4 for graphics. And now for something completely different—both displays can be shown simultaneously on an Amiga monitor. In the IBM world that requires two monitors, typically one for program (menus) and one for graphics.

MS-DOS virtual drives can also be created. Up to four of these devices can reside anywhere—an Amiga RAM drive, floppy disk, or hard disk. It's a powerful way to segment files and processes.

Another plus is access to the extremely abundant MS-DOS software library. While the quality and quantity of Amiga-specific software is increasing, there are unique programs not available for the Amiga. MAP-MASTER from Ashton-Tate comes to mind. This product provides geographic data analysis and presentation capabilities. Demographic, census, and corporate data can be tied to county, state, and zip code boundaries to determine sales potential, site location selection, and similar tasks. It has other features as well. There are plenty of other programs not found on the Amiga.

POTENTIAL PITFALLS

First of all, your wallet will be lighter if you go for the 2088. Still, in a cost-conscious mode, consider that the average MS-DOS software is more expensive than its Amiga counterpart.

In the troubleshooting/cost-conscious mode, factor in 30 to 60 minutes' worth of long distance calls to Commodore's tech support line. Despite an easy physical installation and a limited number of setup procedures/programs, Murphy's Law dictates that a supportive shoulder will be needed. That's because of the Amiga 2000's more sophisticated com-

puting environment–one of the most advanced in the microcomputer industry.

Also consider the time investment. Fine tuning the installation and learning all its nuances could take anywhere from 5 to 15 hours, depending upon the overall ease of installation. (We're not considering the time to learn MS-DOS, either.)

INSTALLATION

The 2088 manual clearly explains and depicts (via photos and line art) the installation process. Turn off all the power, disconnect power cords and monitor cables. Unscrew the cabinet and pull the cover.

The first part actually installed is the 5.25" floppy drive. Nothing is left to chance between the detailed written instructions and four photos. There are two separate illustrations depicting cable connections–one for the drive, another for the 2088.

Dropping the Bridgeboard into the Amiga is as clearly delineated. (Make sure the card is seated properly; it's a tight fit between two different bus slots. During one of my troubleshooting sessions I didn't seat it properly and was greeted by a graphic display of absolutely nothing–not even the Amiga side worked. Luckily nothing blew out.)

Once the cover is reseated, it's time to power up and run the Bridgeboard install program. The provided 3.5" disk comes with BridgeInstall, BridgeInstall 512 (for machines with 512K RAM), SidecarInstall (only for A1000 owners), MiniInstall, a ReadMe file, and a PC drawer which holds PC Mono, PC Color, LPT1 and PC Disk (as explained previously).

My initial Amiga setup, as received from Commodore, was a Boot disk containing Janus and Hard Disk files so dh0 would be recognized from the Workbench. Because of that, some of the circumstances described here are different from those typically encountered with machines purchased from dealers. Still, there's plenty to learn from this scenario, particularly how good the tech support group is.

I had failed (several times) in getting BridgeInstall to work. (BI is the preferred install routine for expanded RAM machines.) Don't bother with MiniInstall, and you've already been told about the other routines.

Copying it to the hard disk was definitely not the thing to do. At one point it worked part way; the step where it erases the c directory, etc., and reinstalls new versions from files previously uploaded to a RAM drive didn't finish. My hard drive no longer had a c directory. It was also missing several others; it was dead in the water. (This caused gnashing of the teeth and wringing of the hands–in Commodore's tech support group. I wasn't too happy either.) Naturally this procedure was attempted without backing up the afflicted directories.

Yet, salvation was nearby. I had made two extra working copies of install disks, and likewise for WB 1.2. A little CLI work and the missing directories were reinstalled. Tech support had me create one or two files, and rename one or two others–these procedures were not in the manual. So, the rule of thumb is to call when logic and the directions don't seem to make sense (or work).

Making a custom Workbench disk with the BI also didn't work, because the system lost the ability to find dh0. Tech support finally got me on the right track (after 30 or 40 minutes).

To make a long story short, working from a clean copy of Workbench 1.2 I stripped out everything but the core system drawer and Preferences. Then I installed the Janus and Hard Disk files in a drawer, followed by BI.

BI worked like a charm, erasing old files and installing new versions. After rebooting, my modified WB disk recognized the hard drive, so I opened the PC drawer on the hard drive.

MY FIRST TIME

Clicking on PC Color, with WB in df0 and MS-DOS in the 5.25" drive, I was rewarded with an MS-DOS time and date prompt. The "A>" was there in all its minimalist glory, surrounded by an Amiga style border and topped off by a mouse-activated pulldown menu. After turning the border on and off a few times I resized the window to access the WB screen. In the PC drawer I double clicked on LPT1 to activate the printer port. (Disregard the initial MS-DOS message that identifies LPT1 at a certain address. It is not active until LPT1 is run.)

Then I activated PC Disk and went exploring.

In the next installment we'll cover some of the operational wonders, spend some more time on details, and discuss the profound mysteries of virtual disks. I may even get my MS-DOS hard card installed by then. □

FLOTSAM

Continued from page 59

here's mine.

There's one feature I miss in all magazines: a special section with tips and tricks for solving games. Not reviews, but advice and help. Best of all would be a game page which could be clipped out and saved along with the game instructions.

By the way, I strongly believe that such help sheets should be included in the game package. We do spend a lot of money on games, and not everybody is a computer wizard.

–Heinz Forstner
Toronto, Ontario

The feature you describe is one that would be best written by readers, who could pool their knowledge on hundreds of titles. We invite gaming enthusiasts to submit their hints; if we receive enough on a regular basis, we'll devote a column to them.

Here's another vote in favor of Stephen E. Franklin's proposed C-64 motherboard for the Amiga (Ed. note: see *Flotsam,* August *Ahoy!'s AmigaUser).* Major companies (Access, Epyx, Electronic Arts, etc.) should push for the creation of such a board–they should realize that it would enable them to make a bigger profit than ever before. Software emulation is good, but extremely slow. I don't want to throw away my expensive C-64 system just because Commodore is lazy.

–Shazada Williams
Brooklyn, NY

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B. What is your age?
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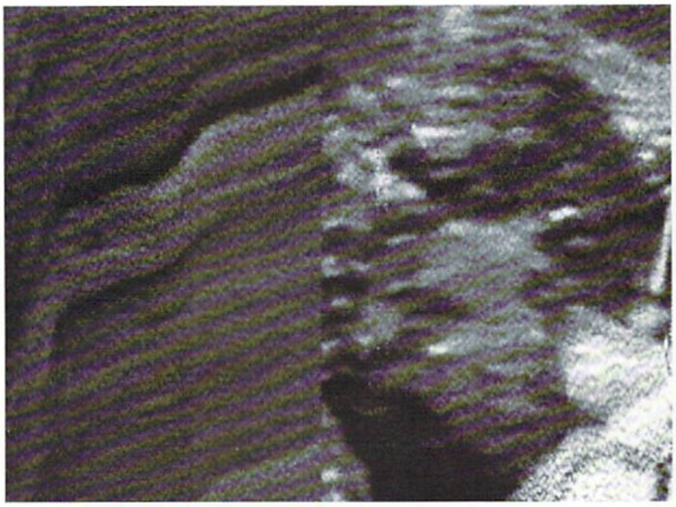
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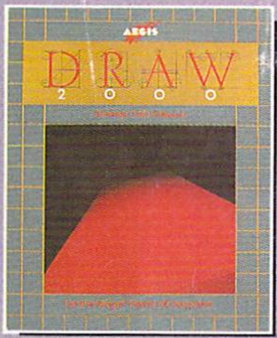
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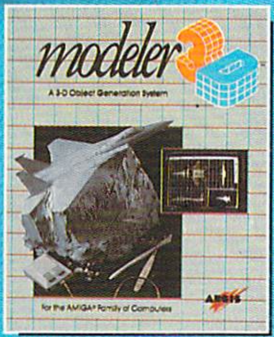
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